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The Training School

EDITED BY

E. R. JOHNSTONE

HENRY H. GODDARD, PH. D.

ALICE MORRISON NASH

VOL. IX, 1912—1913

THE TRAINING SCHOOL
VINELAND, NEW JERSEY

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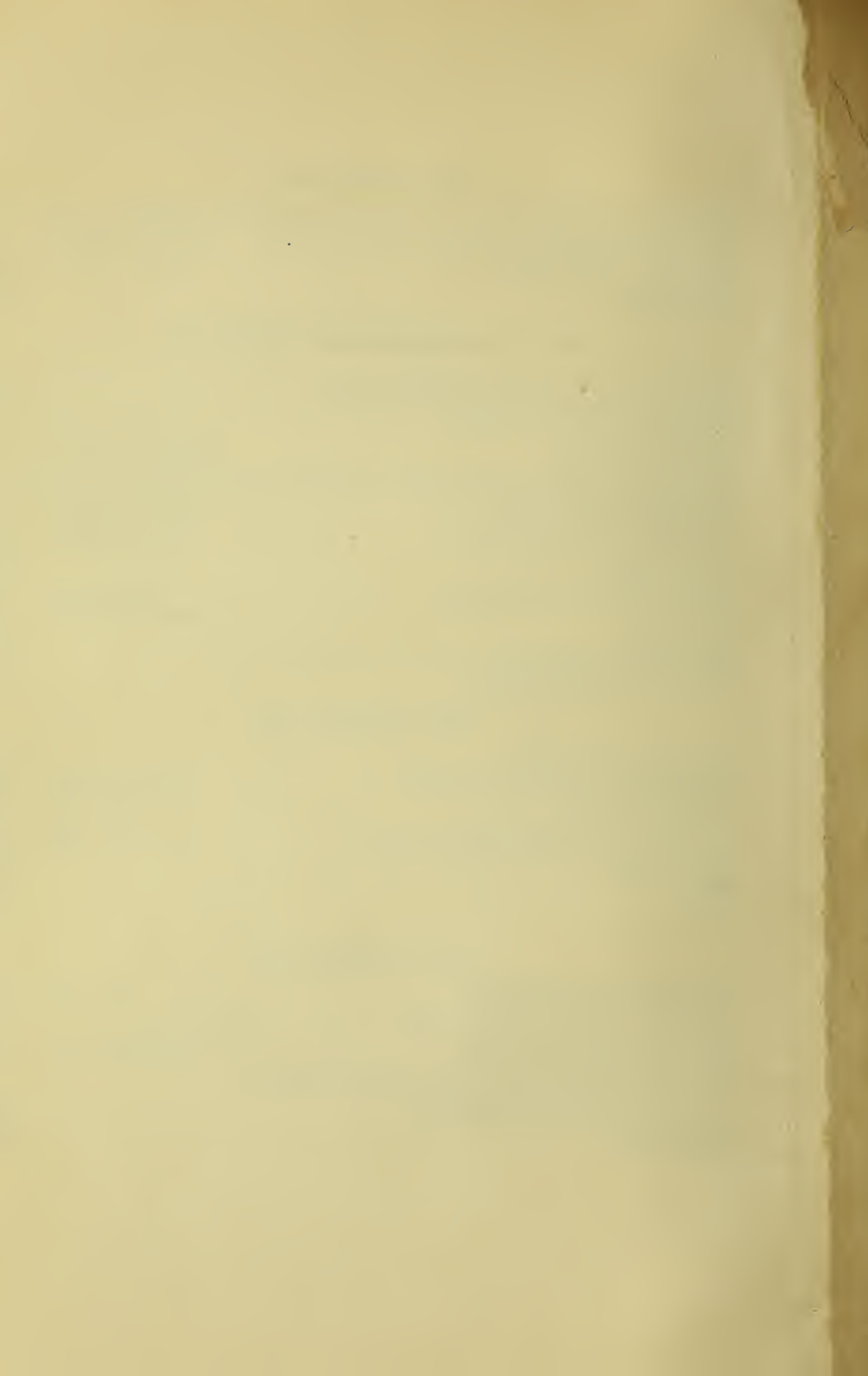
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Vol. IX, No. 1.

MARCH, 1912.

Whole Number 93

The Band in the Musical Development of Defective Children

Hugh Kelley

In this short article concerning the teaching of wind instruments and instrumental music to defective children, I purposely omit technical details, with the thought of making the subject of general interest.

Music has been described by a great Statesman as: "One of the most forcible instruments for training, for arousing and for governing the mind and spirit of man." I think we might add to this, in thought, "and is essential to the well being of defective children."

The truth of this statement is apparent, particularly to those persons whose duties bring them more closely into contact with these children, and who are, therefore, better able to study them in their various moods.

Music of any kind exercises a wonderfully controlling influence upon mentally deficient children of all grades. Whether it appeals to them rhythmically, emotionally or otherwise, it is a fact that they are intensely fond of music, and show remarkable discrimination in their appreciation of the various musical numbers at concerts and other entertainments. It also occupies an important part in their training.

In training these children to lead the most useful lives by selecting the activities that are most worth doing and compatible with their conditions, we can find out, by experiment only, the particular line of training best suited to the individual. Guided by the principle that happiness must come first, and the other things follow after, it is necessary to try and confine the training to those things the children themselves like to do, or for which we can create the desire. Environment plays a big part in this, especially in the musical training.

Our band has always been popular with the children, and to judge from the numerous requests I receive from pupils of nearly all grades who are ambitious to belong to it and play an instrument, I believe it to be one of the

biggest incentives we have. Most of the children have a decided leaning towards certain instruments, but they would be glad to learn to play almost any one.

I do not know of anything that can make defective children happier than some newly discovered ability, such as the playing of an instrument. It is something entirely novel, and gives the child an immense amount of pleasure, satisfaction and additional importance.

At the present time there are upwards of fifty pupils in the Training School who are receiving training with band instruments. These children comprise our First Band, Girls' Band and Fife and Drum Corps.

The proper study of music requires more of the child than any other branch of training. The faculties are closely concentrated, energetically applied, exercised profitably and accurately controlled.

The piano is a popular instrument for the reason that it admits of a wider application than the others, but when it is considered how many lines of thought a pupil at the piano must carry at the same time, it is easy to realize that this instrument is just beyond the ability of most mentally defective children. There is the reading of two letters for each line of the staff, according to the two clefs, the pupil must watch the time value of every note for each hand, he must notice tone quality and general rhythm, and must control the action of both hands and fingers. From a training point of view the study of pianoforte is ideal, and fine results have been obtained with some of our brightest pupils, but at what cost of time, patience and energy only the teachers themselves can fully realize.

Defective children in general seem to be able to adapt themselves better in learning to play band instruments, particularly of the brass section. The playing of these instruments does not require such mental effort or close concentration as piano or other stringed instruments, and when the proper method of producing tone is learned, the pupil does not need to exert much more physical energy than to speak or sing.

A synopsis of the opinions of several French physicians in Paris, who studied the questions as to the advisability of playing wind instruments from a physical point of view, shows that the playing of brass instruments, judiciously carried on, induces healthy action of the lungs, strengthening them and enabling them to resist disease, and may be relied upon as a safeguard against throat and lung troubles common to the average individual.

The encouragement of nasal breathing, which is part of the training, aims at the securing of the passage of air into the lungs and in this way helps to prevent adenoids.

From the calculation of Dr. James F. Rodgers, of the average life of musicians, the following statistics have been computed, viz:

Average life 63.5, with 34 per cent. reaching over 70. Among players, he gives the following ages: Flute, 61; oboe, 63; bassoon, 63; horn, 64;

clarinet, 65.2; trumpet and cornet, 69.1. Upon this it has been remarked that "it is interesting to note that players upon wind instruments who exert the greatest intra-pneumonic pressure, namely, performers on trumpet and cornet, were the longest lived, while the players who exerted the least pressure, the flutists, were the shortest.

There are many advantages to be derived from band work as a method of training. It helps to keep the pupil at his best, calls for his best mental efforts, and improves his concentration and memory, etc. The team work of the band impresses the value of united effort and tends to make him more thoughtful, confident and careful, and habitually inclines him to order and exactness.

Some pupils have the capacity for learning to play a certain instrument, such as cornet, flute, horn, clarinet, trombone or tuba, as though especially adapted to it, and many become players upon a particular instrument when they would fail utterly upon another. Therefore, in order to discover and develop any musical ability the pupil may have, it is necessary and customary to give him a trial with several or all of the instruments at our disposal before deciding that this line of training would be unsuitable. Good results have been obtained from this practice, for instance, one of our pupils, Joe G., was unsuccessful in learning to play tuba after about three months training. He is now getting along well with clarinet. Another pupil, Howard S., failed with several wind instruments, but has made excellent progress with orchestral bells, while another, Morris M., got to the stage of playing snare drum with band, then failed miserably from his bashfulness, but he will make his debut at an early date in First Band with an alto horn. This instrument will not place him in such a prominent position as did the snare drum.

Concerning the actual work of training these children to become players in the band, much could be said if space would permit. It is sufficient to state that each child receives individual instruction, and must be treated individually according to his or her peculiar need. Many pupils have defective sight, hearing and other physical defects. Lack of confidence, poor memory, mental aberration and nervousness are the common failings.

They are inordinately sensitive to blame or censure, and to get them to put forth their best efforts it is absolutely necessary to see only their good points, and enlarge upon them and to find good points where none exist. Encouragement is the *sine qua non* in the training of defectives. The method of procedure varies according to the disposition and mental and physical capacity of the child, restricting him to such technical knowledge as is essential to his progress and can be supplied successfully. For instance, it is useless for us to expect a child to remember, first, the name of a note, C or D, as the case may be; secondly, its additional title, semibreve or minim; thirdly, its time value, 4 or 2, etc., and fourthly, how to finger it upon his instrument. He will play it equally as well upon his instrument by merely know-

ing how to produce it, *i. e.*, to finger it correctly, and how to apply it in relation to the other notes. The teacher can accomplish much by playing the exercises or pieces with the pupil in the earlier stages of the training. Mistakes either in the playing or handling of the instrument must be corrected immediately. These children develop faulty habits in a very short time, and the teacher must be ever watchful. For this reason it is necessary to supervise all the individual practice.

If the pupil can count and understand simple fractions, so much the better, he will more readily understand the fractional value of notes. If he cannot count or even read but little, as sometimes happens, he may still learn to play, partly from whatever knowledge he can acquire, and partly from his "musical ear" and sense of rhythm. Then, by reducing the amount of material given at a lesson until it is within the pupil's power of assimilation and comprehension, and afterwards increasing it in barely noticeable quantities, he gradually becomes more capable and less mechanical in his actions. It is useless to go beyond the pupil's receptive capacity, and it is necessary to know when the lesson should stop. He may grasp it up to a certain point beyond which the mind is incapable of receiving more. To proceed further is not only waste of time and energy, but is liable to confuse the pupil and cause him to forget the preceding part.

Effective progress cannot be forced; therefore, slowly to develop and perfect the efforts in a simple form of music is the best way to succeed.

Our First Band, to which we are constantly adding new players, numbers in its repertoire such pieces as "Poet and Peasant" (Luppe); "Chimes of Normandy"; selections, "Terzetto and Finale" (Attila), and various other standard selections from the operas.

Summed up: The work of training the band as a whole consists primarily in the development of each player to his fullest capacity as a soloist; the working up of each section of the band to fulfill its particular purpose, at the same time preserving the correct balance of tone, and finally, the connecting of all sections into whatever combination the particular harmonic effects of the selection demand.

It is slow and rather monotonous work, like many other branches of the training of defective children, but it is an excellent means of training apart from its utility in contributing to social enjoyment. It seems that by the divine adjustment and balance of things, these children who are lacking in mentality have at least one thing common to all of them, the love of music and the gift of musical sense.

In the well-known words of the poet, Whitman, "All music is what awakes from you when you are reminded by the instruments; it is not the violins and the cornets, it is not the oboe nor the beating of the drums, nor the score of the baritone singer singing his sweet romanza, nor that of the men's chorus, nor that of the women's chorus; it is nearer and farther than they."

Vineland as Seen from England

We quote the following from the July, 1911, number of the *Eugenics Review*, published by the Eugenics Education Society, London.

This is from an article, entitled "Crime and Eugenics in America," by Arthur St. John, Honorable Secretary of the Penal Reform League.

"Another institution worthy of note is the Training School for Feeble-minded Girls and Boys, at Vineland, N. J., which has about 400 inmates, of ages ranging from 5 to 60, 'of all grades, from the profound idiot to the merely backward; of all pathological types, from the cretin to the microcephalic; and of all social conditions, from the child of the feeble-minded pauper to the child of the wealthy man of intelligence.' It is organized on the cottage system, and is managed by a Board of Directors, and with the assistance of a Board of Lady Visitors. In his 1910 report, the Superintendent of this school says: 'We are about the right size numerically to have good classification, to handle our wards with the least trouble, and we have enough of each type to make every study possible. No private institution is more than one-sixth as large as ours; no State institution can hope to stay as small. Ours is the great opportunity.'

"At this school they make a special feature of research work and of the training for teachers of special classes. They have also incidentally been carrying out experimental farming, and have apparently won the confidence of farmers by their demonstration work. They also publish a monthly paper, called *The Training School*, a most interesting and instructive journal, of which the annual subscription has just been raised to \$1. For the training of teachers they have a summer school, with a six weeks' course. As an experiment, a three months' normal course was announced last year, to be held in February, March and April of this year, whilst a course lasting one or two years is under consideration.

"The following account of the research work at the New Jersey Training School is taken from a paper by Dr. Henry H. Goddard, its Director of Research, which was read by him at the International Conference on Home Education at Brussels, August, 1910, and published in *The Training School* for last December:

"Three assistants are devoting their entire time to making the observations, tests and examinations for the case histories. Three others are working in the field, studying at first hand the histories of the children. An extensive study is being made looking to the prognostical classification of mentally defective children. For this purpose the records of the observations made by all of the hundred people who work with the children,

together with the scientific tests that are made upon them in the laboratory, are being put together and correlated, so that we shall be able eventually to know the relation between what the child can do in response to tests, and what experience has proved that he can be trained to do in the general work of the institution. In this way it will ultimately be possible to examine any child, and tell to a nicety the degree of his mental defect, the probable training that he will be capable of receiving, and the direction and kind of instruction that he should receive. This may point the way for something analogous for normal children. . . . We are using systems of testing devised by Professor de Sanctis, of Rome, Italy; Professor Binet, of Paris; those used by Dr. Norworthy, of Columbia; some individual tests by Professor de Moor, of Brussels, and others; also tests of motor control adapted from the psychological laboratory, or devised by ourselves. Altogether, we have over one hundred tests that we are trying.'

"Plans for the future are also discussed, such as result from the 'broad view the management has taken, whereby the real work of the institution becomes scientific investigation, and the care of the children, though no wise neglected, a mere incident of the larger plan.' I cannot refrain from quoting the requirements advocated by Dr. Goddard: 'To carry on this work there will be a director of research; a psychologist, with one or two assistants; a bio-chemist, with probably two assistants; an anthropometer, with an assistant; a neurologist; a pathologist, with an assistant; a chief of medical research, with an assistant; three field workers in heredity; a chief of the case history work, with three assistants; an editor, with an assistant; a chief of the Department of Experimental Pedagogy, with teachers and trainers; a food specialist; a librarian, stenographers and clerks. Apparatus and a library well supplied with journals must be added. With such an equipment it will be possible to utilize the material here available.' And he adds: 'This work will be permanent and yield results for years to come.'

"Do not the foregoing afford some ideals for the legislators and those interested in these problems in our land? If it is asked, What would be the use of it all? and if it is objected that it would be too expensive, I would answer that the results to be expected are at least three-fold. We may hope thus to learn much that we do not now know as to the heredity and natural causes of feeble-mindedness, and as to how the feeble-minded can best be treated so as to make them useful and happy. In the second place, well-conducted schools for the feeble-minded must have a great effect on our prisons. Even with our present knowledge, we know that a considerable proportion of the prison population should certainly be placed in such schools, and further research may show that more than we now think might with advantage thus be transferred. But besides relieving the prisons of their inmates, these schools certainly would afford a more excel-

lent way—a more scientific, common sense and religious way—of organizing the work and of training these unfortunates. And thirdly, these trainers of feeble-minded children constantly remind us that their pupils differ from the normal only in degree and not in kind, 'so that,' according to the Superintendent at Vineland, 'every discovery we make has direct bearing on the education of normal children, particularly in the primary grades.' In this sense these schools for defectives are pioneers in education and explorers in practical psychology. Money spent in this way will be money spent for education, spent for finding out how we can do more in cultivating and economizing human capacity, in developing human character and in raising a better generation of men and women. But perhaps the greatest lesson of all, which might be worth pondering for educators in schools, in homes, and even in prisons, is the great lesson of these feeble-minded schools expressed in the advertisement motto of the Vineland Training School: 'We believe in happiness first—all else follows.'

"If the patience of the reader is not exhausted, I should like to point the moral, although it seems only too obvious. There are many people in our prisons and workhouses, and loafing at street corners or worse places, who might have been saved for better things—for happiness and some degree of usefulness. These should have been found out early in life and trained, though in many cases even now it is not too late to greatly improve their lot. But how about the children who are being born and growing up to the same fate? Are we not going to step in and do our duty concerning them?

"Careful preliminary study and investigation of every individual case of need or delinquency; proper training and care for as long as is required—permanent where necessary; prolonged and diligent inquiry and research regarding the whole subject, this is our three-fold moral. For all this work great expenditure, thought and care will be needed—perhaps as much as for a small war. Here is an opportunity for rich men of intelligent good will. Here is an opportunity for legislation and for the useful application of public funds. Legislation is no doubt called for to enable certain persons to be detained, or rather, to prevent their being inadvisedly removed from proper care and suitable surroundings. But, for the funds, how much better it would be if the people at large could be made to see where the need lies, and were thus by conviction impelled to give their pennies and their shillings and their pounds. A utopian aspiration, no doubt; and yet, if those who do know the facts were to go forth and make them known amongst people of all sorts and conditions, telling them how these evils could be met, I have a notion that there would be a large response, and that we would cease to say, as we do say now, to these heirs of ill-condition and defective nature:

" 'We know you are unequal to the struggle of life; we know that only

the most precarious livelihood is for you; we know that the discipline of the shop and of the street will be too much for you; we know that in a very few years you will return diseased and broken, a wreck seeking a home in the almshouse, or you will be locked up in a jail or be confined as a dangerous lunatic—all this we know, yet we launch you forth.’ ”

Estimated Number of Feeble Minded Persons in State Reformatories and Industrial Schools

A letter of inquiry was sent to the State Reformatories and Industrial School asking: (1) The number of inmates in Institution: (2) the number considered to be mentally defective: (3) whether or not such cases were desirable in an institution of that character: (4) what has been found the best method of treatment: (5) what was their estimate of success in the treatment of such cases.

We have received thirty-four replies, representing 13,188 cases. Of these, twenty-seven superintendents have made an estimate of defectives, amounting to 14.5 per cent. of all inmates. A few of the superintendents did not seem to be quite clear as to meaning of the term “mentally defective” as used in this connection. Only one institution considered all of its inmates normal. With this one exception, the estimates were 1, 20, 27, 33 and 35 per cent, 41 per cent being the highest. The superintendents on a whole agreed upon the undesirability of such cases being in institutions of that nature:

The following quotations from letters received, gives a general trend of the replies:

National Training School for Boys, Washington, D. C. “I do not believe that an institution of this character is the place for persons who are not able mentally to take an education, since I believe that education is the true basis of reformation. We find in dealing with this class of boys that we must treat them exactly as we would treat boys of more tender years, except that we have them work at that kind of employment to which they are best adapted and have them do as much as is consistent with their physical condition. It is hard to estimate with any degree of accuracy the success of any school of this character in dealing with mentally defective children.”

Elmira State Reformatory, Elmira, N. Y. “The number of defectives in an institution of this character is much larger than is supposed. While a large number of the defectives receive such benefit as enables them to regain their position in society and maintain themselves by their work, there is a residue of such low type that very little can be accomplished with them. They are never able to reach the standard of discipline of

the institution and are a hindrance to all with whom they come in contact; the severe discipline of an institution of this character works a hardship on them. They are unable to attain the standard for parole and in most cases serve their maximum sentences, when they must be released unimproved, to again prey upon society. While they have committed crimes, it is usually due to their imbecility, and they are better cases for custodial care than for reformatory treatment. The legislature should be asked to authorize by law the transfer of such mis-located convicts to an institution which can give them custodial care and where they may be restrained beyond their maximum sentences, as are the criminal insane at the present time, and where they may receive that kindly care which is impossible for them to receive in a reformatory institution, whose discipline is intended to be of a very different nature."

The Preston School of Industry, Ione, Cal. "We average in this institution monthly, 400 inmates. To the best of my judgment I should say that 20 per cent of them are mentally defective. Of this number one-half of them are so mentally incapacitated that they should not be confined in this institution, but should be in a home for feeble-minded. We have a home of that kind in California, but it is full to overflowing, and because of that a great many foolish boys are sent to this institution that ought not to be sent here.

"You will gather from my answer to the second question that I do not consider it desirable for such cases to be committed to a reform school. I am firmly of that opinion.

"The only treatment we can give mentally defective inmates is kindness, what medical attention we are able to render them, have them live in the open air, working on our farm, in the horticultural department, garden, etc., and, of course, insisting upon the discipline of the school, which means regular hours of work, sleep and recreation, all of which tends to help and strengthen such mental conditions.

"In my judgment, pursuing the course as above outlined, of the 10 per cent. who are not too mentally weak, we achieve considerable success, and in some instances produce a fairly well equipped boy. They are certainly better off here than they would be running the streets, and for that reason, and because of the lack of any other institution, they are committed to us."

Ohio State Reformatory, Mansfield, O. "I would say that we have in round, numbers one thousand inmates. The population has not varied very widely from that figure for some time.

"I take it you realize the difficulty of giving a definite answer to your second question as to the number I consider mentally defective, speaking exactly. I believe a majority of them develop a wholesome normal more widely than the average man in Ohio. I think out of a thousand I could at least safely select fifty who are so clearly below standard of mentality

that I could scarcely hold them responsible. We have another group who come to the Institution more or less mentally defective, their difficulty growing out of their excesses and dissipations; these, as a rule, improve and become normal. We have still another group that might involve occasionally the character in the first two, namely, insane criminals. These, in my opinion, should not be in this Institution, and many of the first group should be in an institution for feeble-minded. The second group, I think, it is well to test out in the Reformatory, and if we cannot reach their case they should be sent to an institution for mental defectives.

"As to our method of treatment, I would say that we depend largely upon wholesome living, plenty of sleep, plenty of work, plenty of food of wholesome character, and occupation of the mind with mental diversion. There should be a place in a prison to laugh. I would say a good physician devoted to his duty is a wonderful help, and I have been fortunate in this matter.

"As to the success we have attained, I would say that our success with group two has been extraordinary; with group one, reasonably satisfactory, and with group three, we retain these under protest, and little improvement is shown."

Industrial School for Boys, Eldora, Iowa. "We have 360 inmates. I am inclined to believe that 20 per cent. of our boys are more or less mentally defective. Of course, it is difficult sometimes to draw the line, but I believe at least 20 per cent. of the boys in institutions of this character are mentally defective. We do not attempt to keep and treat the worst cases sent to us, but make provision to send them to our School for Feeble-minded. We, perhaps, send six or eight to that institution each year.

"Boys of weak mentality often make it very difficult to maintain the standard of discipline. They are also unable oftentimes to hold their own with the other and brighter boys, and make much extra work of this kind. I regard them as a very undesirable class of inmates in an institution such as ours.

"We are not able to do much in the way of treatment, but oftentimes the building up of the physical, removing of adenoids and such medical attention will bring about wonderful results. We have a large farm and garden, besides numerous shops and departments, and boys are given every opportunity to gain strength by outdoor exercise.

"Our success is estimated only by what we see and know of the boy after he leaves the institution. We have a State Agency Department, and all boys are looked after until they attain their majority."

A similar letter is now ready to be sent to the Superintendents of the Institutions for Feeble-minded, asking the estimate of cases considered to be defective with dangerous moral tendencies.

Current Events at The Training School

January 28—The boys enjoyed the good coasting on the Robinson Incline.

January 30—Miss Emily Hoopes, Principal of the Friends' School in West Chester, and four of her teachers spent the day with us.

Cattell A' boys had a party supper. Their menu consisted of sandwiches, cocoa, candy, oranges, cakes, crackers and ice cream. It was Stuart C ——'s treat to the boys in his group.

January 31—In the evening a teachers' entertainment, given by Miss Capner and Mr. Kelley. The following program was rendered:

Selection by the Band—March, "The Tenth Regiment."...*Hall*.

Song—"I've Lost My Teddy Bear."

ANNA.

Baritone Solo—"Carnival de Venice."

LOUISA.

Selection by band—"Chimes of Normandy."—*Plauquette*.

Recitation—"What Was in His Pocket?"

HARRY.

Serenade—Trio for flute, horn and piano.

MISS NELLIE, MR. KELLEY AND WILLIE.

Cornet Solo—"I Hear You Calling."

CHARLIE.

"The Night of the Party"—Sketch—introducing Yama San, Francis J.; recitation, Charlie G.; Spaghetti Quartette; conjuring, etc., Professor Humbug; song and drill chorus, "Tum Tum Tiddle."

Band selection—March, "Shoulder Arms."

Final Chorus—Barcarole—*Tales of Hoffman*.

Good-night Song.

February 3—After Saturday Store most of the boys spent the afternoon on the skating pool.

February 4—Doctor Downing, of York, Pa., visited and spoke to the children in Assembly.

February 5—Miss Annie entertained the Seguin Cottage Girls with the Robison Boys' new zonophone.

The six months' course for Institution employees opened to-day.

February 7—Dr. A. O. Norton, of Harvard University, and Mr. Niedlinger, of Orange, N. J., were special guests at the Christmas Entertainment Party.

February 8—Senators Gaunt, Nichols and Smalley and Assemblyman Coles, members of the Appropriation Committee of the State of New Jersey, inspected the three Institutions at Vineland. They visited several of our buildings, and saw the children assembled in Garrison Hall.

February 9—Dr. Walter E. Fernald, Superintendent of the Institution for Feeble-minded, at Waverly, Mass., visited.

Moore Cottage boys spent the evening at Robison Cottage, where they were entertained with the mirror-scope and zonophone.

February 13—Dr. George A. Mirick, Assistant Commissioner of Education of New Jersey, visited to look up special class work.

February 14—A Valentine Party in the evening. Every child received at least one valentine, and many received more than one. For days past the children have been enjoying the making and sending of their valentines. Some 500 were made in the school rooms. Several employees contributed generously to this party, thereby adding to the pleasure of the evening. Miss Enid Johnson, from Indiana, was a guest at this party.

February 17—Doctor Cornell and Doctor Vogelsson, of the Department of Health and Charities, of Philadelphia, Pa., visited.

February 22—"Big Store Day." The children's records for several months past were checked off and commented upon by the Superintendent, and their money allowance given them. Then the children trooped to the upper hall, where, on decorated counters, were for sale many of the things to be found at the "County Fair."

The employees of the School joined the members of the Social Club on Saturday evening, the 6th, and celebrated the opening of the rebuilt and newly furnished club rooms. The large number present spent the evening very pleasantly, playing the different games, of which the Club has a good supply. Some enjoyed themselves (as well as furnishing enjoyment for others) by music from the much-appreciated piano donated by Mrs. Haberkorn.

When the proper hour arrived an invitation was given to continue the evening's pleasure in the dining rooms of the Maxham Cottage, to do justice to the luncheon prepared by the gentlemen of the Club. It is not necessary to say this portion of the evening was appreciated. The men of the Club did the serving with many suggestions and much humorous advice from the ladies, who enjoyed a reversal of the usual order of affairs.

While we have many enjoyable times at the Training School, this event stands out as a most happy one. The loss of our Club Room several months ago was keenly felt, but the disaster was turned to good.

F. M.

For three years past we have given a special party for the children who took part in the Christmas play. It has always been a most enjoyable gathering. This year it was even nicer than in other years. The children took charge of the program, selecting refreshments, writing the invitations and receiving their guests.

As the children who took part numbered some seventy, it seemed a large number to provide refreshments for, especially so if other guests were to be invited. The Committee on Refreshments, Tillie, Mazie, May, Henry, Howard and Frances, talked it all over and decided to have fewer refreshments, but to invite all of the members of the "Family." Every one agreed to this plan, so the party numbered one hundred and twenty guests.

The Committee on Entertainment prepared an interesting and lively program. Joe G., who took the part of "Night" in the Christmas play, took charge of the program; Robert F., who was "Bread" in the play, read a story; Willie D., the "Cat," and Mr. Kelly played a duet; Louisa B., one of the "Daylight Hours," played a baritone solo; Malcolm P., "Tytyl," recited, etc.

It was a most enjoyable evening and will be remembered through the year to the dawn of another Christmas.

Sunday afternoon I told a number of the small boys a story about Christmas. After telling it they all promised to be real good, and said they wanted Santa Claus to have good reports about them. Leon spoke up and wanted to know if Santa Claus would come around before Christmas to see if boys were good. I told him I thought he would, and he better keep wide awake and watch out for him. When I went through the dormitory after the boys were in bed I found Herman at the window. I asked him what he was looking at, and he said he was going to keep wide awake to watch for Santa Claus.

The Zonophone, that was given to the Robison Cottage by Mrs. Newell, has given the children, as well as the employees, much pleasure.

Carl took an afternoon off to do some shopping for his Christmas. He made his purchases quite judiciously, discriminating carefully between a sweater worth \$2 and one \$2.50, because the latter had "a better feel." He enjoyed the opportunity very much, and thanks his kind friends who sent him the money.

"Horace" says the Physical Culture Teacher marks his O. K. slip where it says "filthy culture."

Our new "Mirrorscope" has been the source of great pleasure to many of the children. We have had many evenings of enjoyment with it. A picture of Santa Claus thrown upon the screen calls forth much enthusiasm at this particular season of the year.

Postal cards received by our boys are put away and carefully kept, and when it is their turn to have the mirrorscope, their cards are the first to be shown.

On Christmas morning, when Herman found what Santa Claus had brought him, he was so delighted he could hardly contain himself. He had been hoping he might bring him an Irish Mail, but when his hopes came true and he actually sent him one, his face was a study. I asked him if he did not think he was a good Santa, he said, "Yes, indeed, and he ought to have something, too," and when I asked him what he thought Santa would like, he said, "He ought to have a good O. K. slip."

When new caps were given the errand boys, Junior B. was delighted, and when he came to show it to me, told me he had four caps. I told him I could only see one. He had me guessing a while, and then he surprised me by saying, "I have two knee-caps, one thinking cap, and my new red errand-boy cap."

Raising chickens and the production of eggs has become one of the important branches of farming at the School. We began about three years ago on a small scale, with a few chickens, and have gradually increased our stock until we have about 800 yearling hens and about the same number of spring pullets. Our egg output for the year was 8,082-1/12 dozen.

We have an up-to-date brooder house, with an ideal incubator cellar attached. The houses are heated by hot water, thus doing away with danger of fire from oil lamps.

We shall start incubation about the 1st of January for broiler chicks. The breeds used for broilers are Wyandottes and Rocks. Those raised for layers are S. C. W. Leghorns. It is a source of comfort and economy to be able to produce all the fresh eggs used for the school.

This poultry plant is managed by M. Fleischer, our dairyman, with the assistance of the pupils.

In the Kindergarten Class Irene was playing with the blocks. She put several together, train fashion, and said, "Chuc-chuc-chuc, Irene, go and see Leslie and Charlie." (Leslie is Miss Foy, who found Irene. She is a reporter for the Philadelphia "North American," and Charlie is her father.)

We are forming a "Fife and Drum Corps" of our older boys—boys

who aim to play in the band, but are hardly capable of mastering the regular band music. The fife and drum corps will play for the children to march to the morning Assembly, and for Filled Days, Fourth of July, and such times. The boys are delighted with the prospect, and are very ambitious to practice and get "able to play." A. F. N.

I have a charming box of blocks in my office which I use for children needing the larger materials. D. loves these blocks; loves to write names with them. He can write his own name without help. To-day he wanted to write "Prof. Johnstone"; this he did from copy, and now wants to write it all by himself, so I will call Prof. Johnstone on the phone and have him come over and see D. write his name.

The boys dug their peanuts to-day and were delighted with the amount their gardens had produced. They took them to the third floor and spread them to dry, and some evening, or many evenings, next winter they anticipate lots of fun roasting them. Of course, they will taste better, raised by themselves in their own gardens.

Progress of the Work for Defectives

VERMONT.

"In reply to yours of February 14th, I have to say that at the present time the defective children of our State are cared for in institutions in other States. Recently, by will, we have received a bequest of \$50,000. The Legislature of the State has appropriated \$50,000 more, so at the present time the trustees have in hand a farm of 212 acres, with a stock of cattle and other equipments of the farm, and the \$100,000.

"We propose to erect a building the coming season for the care of the deaf and blind. Later, another year or two, according to circumstances, we shall erect upon another part of the farm a building for those mentally defective."

ORANGE, N. J.

Miss Moore has been testing children in Orange, N. J., by the Binet method. She writes:

"Dr. Porter is expecting to have two or three special classes, and is looking to Vineland to provide her with teachers. I had principals, supervising principals, teachers and nurses all day as audience. Some thought a normal child could not do the tests. I was testing 15-year-old children in the Second Grade and they were all coming out 7, but I did not know they were Second Grade children. I said, 'Bring in an 8-year-old child

from any grade or off the street, and see if he can't do the test! The child tested 9, and the Principal said, 'That's all I want. We will have as many special classes as Dr. Porter says we need.' "

Dr. Porter writes:

"Miss Moore tested about sixty backward children, and the results were wonderfully consistent with the conclusions already formed by the principals, though they had no scientific reasons for such deductions."

Grafton D. Cushing, speaker of the Massachusetts House of Representatives, had this to say in his inaugural:

"There are at least 9,000 feeble-minded persons in Massachusetts whose condition is a serious drain on the resources of all public and private agencies of public and private charity. The feeble-minded almost invariably become the dependent, the delinquent, or the diseased members of our community, and their offspring become equally a charge to the State. There are now cared for in various institutions about 2,000 feeble-minded, and there are 7,000 more the ultimate burden of whose criminality and immorality will be a cumulative burden and expense to the State until proper segregation has been provided. It has been calculated that if \$300,000 a year were spent for fourteen years sufficient accommodations could be provided for the segregation of these unfortunates. It is a large sum, but the necessity is urgent, and unless the State meets the problem promptly and courageously, the constantly increasing cost of the feeble-minded and their descendants thru our courts, prisons, hospitals, asylums, and charitable institutions will probably amount to almost as large a sum without checking the spread of the evil."

Mayor Fitzgerald, of Boston, Mass., to-day announced the results of the first three months' work on the part of Dr. William J. Gallivan, the new chief of the Division of Child Hygiene of the Boston Board of Health.

Of the 42,750 children examined by the school physicians under Dr. Gallivan, only 14,957, or 35 per cent. were found to be physically normal, healthy children. The defective children below physical par numbered 27,795, or 65 per cent.

The defects in detail were as follows: Mentally deficient, 223; defective nasal breathing, 3,562; hypertrophied tonsils, 9,738; defective teeth, 19,518; defective palate, 86; cervical glands, 4,425; pulmonary disease, 456; cardiac disease, 1,129; nervous disease, 213; orthopedic defects, 521; skin, 3,509; rickets, 575; malnutrition, 1,611.

The Legislature of Virginia has just passed a bill establishing its first Colony for the feeble minded.

Dr. Goddard has been appointed to investigate the Special classes (ungraded classes) of New York City. This is a part of the School Inquiry authorized by the Board of estimates of the city.

The Training School

Devoted to the Interests of Children Requiring Special Care and Training

Edited by

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Visiting

*Read before Special Class Teachers and Supervisors of Boston,
January 26, 1912.*

Our little handful of teachers has been studying quietly, and, may I say handling deftly, problems mountain high. I hope it may profit you as it has me to look back into the deep valleys.

In the beginning, Bunker Hill Special Class, to untrained eyes, looked attractive, "of a higher grade of mentality than some of the older classes." The children really were so unfed, overfed, ragged, unhappy, uncared for, neurotic, that the question at once became, "Why, oh why? And how can I help it?"

Some of the "why's" are answered, and I hope a beginning has been made towards helping it.

The home visits are certainly revelations. At Jack's so-called home lived eleven persons in two rooms, excavated under the street, with no daylight. The sky was visible in a six-foot square yard in the rear, where "clothes"—bundles of dirty rags—were dried.

Each child was of lower mentality than the next older, father worked for a possible three months in the year, at teaming. He and the older brother were sad alcoholics. Mother cleaned office buildings in town between 2 and 7 A. M.

And I, in our sunny room, had been wondering why, when, upon my bringing pretty flowers from the country fields to the school room, Jack invariably said, "Oh, how pretty! But when will they die?" When I started an aquarium, Jack said, "Oh, they'll all die pretty soon." When the seeds sprouted in the window box, Jack wondered "why they didn't die?"

And Normal School had taught—"All new facts must be based on

former experience. Tack the new to the old!" Poor Jack had nothing to which to tack. Appeal had to be made to him at first entirely through the senses. After four years, he is now holding his own in Grade 5. The family have a sunny home. Even father does better.

Billy, 7 years, chronologically; under 4 mentally, was irrepressible, a street Arab. He did half make a basket, loved our class, but on the second day disappeared. A telephone call from the Chardon Street home revealed the fact that he had been found, pockets full of dry biscuits, a dime novel under his arm—he couldn't read a word—an old slouch hat on his head, cigarette in his mouth, and, with a long rope for lasso, was "hunting Indians in the West End." His home again told a story. Not in one visit, but in many scattered over weeks and months.

Father, a moving-picture show artist, who deserted the mother seven years ago. Mother a normal degenerate. Grandmother, who supposedly cared for Billy, a worse degenerate.

When I inquired how many beds they had, Billy said, "Oh, papa is gone, and mamma sleeps with Uncle Tom one week, and Uncle Jim the next, and then with Uncle John, 'nd they fight over it, too!" (These were so-called boarders.) The little fellow slept in the same room on the floor, and so was full of the vilest information for older boys. More often he stole out in clement weather and slept in an old soil pipe. He said he did this "to get away from mamma. She always licks me 'cause I pinch her money and things."

He is now quite happy in a Catholic Home. Still I wish you might have seen him as he clung to my neck, tearfully begging me to stay, when I called at the Home. It had been three months since anybody had inquired for him. And, as he expressed it, "I *do* hate to let you go back to the other fellers!"

We are trying to carefully undo criminal proceedings at home.

Ella was 10 and in Grade 1, and was rejected as too low grade for my class when the class was opened. She tried ungraded room, and was turned out as too bad an influence. She roamed the streets. At 12 came physical maturity.

Father is a deformed imbecile, and a recently reformed drunkard. Mother, upon my first call (for our nurse had begged for assistance) was a raving maniac. She had been permitted to leave Westboro Insane Asylum on parole. It took calls upon eight court and State officials (each of whom said it was the duty of somebody else), and finally a personal call upon the Superintendent of the Asylum to assemble police and nurse assistance, get the proper papers made out, and return her.

Ella, in the meantime, we saw in dreadful state in our park, on dark doorsteps, etc. Every loafer enjoyed her company. With much difficulty the father was persuaded to send her to Waverly—and Dr. Fernald again

proved our good friend in need and took her at once. At the expense of \$180 per year to the State, she is well and happy, busy, and, best of all, safe.

An older daughter does well in keeping a neat home for father and three brothers.

The Browns were and are in the lowest state of degradation to which humanity can attain, I fancy. Were Itard with us, he would have no need to go to the forest to trap his Savage of Aveyron.

Eva, 14, was my charge. I took her, partly out of pity, for several substitute teachers, who suffered with her. Not allowable, of course, but I cannot regret the action.

The home is two filthy rooms—mere boxes. Mother is F. M., lazy and ill. Father alcoholic; six imbecile and idiotic children—mostly girls. One boy of 4 is a mere mass of flesh—profound idiot—who is strapped to two nails in the baseboard all day long. No clothing, and alive with vermin. There was but one dress in the family.

Papers were ready for Waverly for Eva—for we hoped to remove them one by one as they came to a dangerous age (this seemed most humane), when an officer of a charitable association told the father that he was going to “send the whole family to Waverly at once.” Now, the mother had an epileptic sister, who, she said, died in a spasm at Waverly. So the papers were unsigned and our case lost.

Creditors pressed so hard that the family moved to Somerville, just out of reach—but in sight daily. Yesterday an officer of the S. P. C. C. called for some information about them, and hopes to take them as neglected children. Is that reaching the source of the difficulty? Father and mother have only very recently—at the time of the Waverly scare—had their marriage solemnized. Another wife and grown-up son are in New York.

The Hooligan home is poverty stricken. Mr. H. hated work and loved rum, and when intoxicated disliked our nurse. So when we could get no results from the doctor’s notice that Margaret’s hair needed attention, I responded, taking with me a bottle of larkspur, with the intention of staying until it was properly applied, and then carrying the poisonous bottle away.

Mrs. H. had seven children, one a two-day old baby. When I made known my errand she said, patting me on my shoulder, “Aw, now, Miss Powers, and what’s a few boogs, more or less?” I was permitted to build a fire, heat water, and clean Margaret’s head. Her hair was so soft and pretty for just one day. And then, after she had slept with the others, I had to agree, with Mrs. H., “What’s a few bugs, more or less?” Visits, like teaching, are so often seemingly fruitless. Sometimes just a seed is left. After two years the H. family returned to the district, and

I called. Margaret hastily swept out a place for my feet, wiped out a chair with her apron, remarking, "We used to try to keep it clean at school, didn't we?"

Tiny 11-year-old Sarah's home is a shelter. No, not even that. Mother is always on the verge of delirium. Alcohol holds sway. So many times she has been arrested and returned because of those four small children! Two older boys are bound out until they become of age. Mother counts the days until they can earn money enough to "buy her a little tipple." Father is on the island; sixth offense; intoxication. Their family difficulties are well known, for, when, one morning, Sarah was absent and the patrol wagon gong sounded outside the school door, Mabel said, "Miss Powers, I do hope that isn't Sarah's mother being pinched again! Don't you?"

It was at their home that I saw the 2-year-old baby, barely able to sit alone on the floor, drinking whiskey from a tin dipper.

Sarah is happy with us and protected. I hope she may not live to suffer the dangers that threaten, for she is practically stunted, bodily and mentally, for life. Sometimes I have dreamed of her at Vineland enjoying the out-of-door games, the donkeys, the camp, the berrying and fruit canning, the school and assembly, and parties and all. How I wish it might come true!

The Washington family domicile is typically colored. Not a trace of the refinement that might be expected from the existence of one white member, two generations ago. Two rooms, papered with gaudy green, red draperies at the window, yellow table cover, heaps of unmended bright-colored hosiery mixed with apple cores, gum, etc., in the corners, a couch piled with a wriggling, laughing, noisy, happily dirty set of eight little black babies of varying sizes, but varying little.

On a hot June day, all that is missing of what might have been the Ol' Virginia home, is the cotton and the watermelon. Even the odor and the flies are all there.

Our George Washington tried third grade this year, led his class for a few days, fell a little behind, then more and more, and the teacher became discouraged, not understanding that freight trains have fully as important a mission as express. George came back, and is doing some work in advance of the third grade class, but he sets his own pace and has no competitors.

Upon my first visit to the Green home, four children and the weak, feeble-minded mother were just hanging over a kettle of boiling pork, barely able to wait for it to cook—the first meat that they had had for four weeks. They had lived on beans.

The mother said her husband and older son drank, and lost their work, and were often on the Island, and she took these four children every

night, when the men were at large, after her day of scrubbing, to a moving-picture show, where she and they were safe from personal injury until 11 P. M.

My Tom smoked cigarettes terribly and I worked with him much and long. Still the odor came daily and Tom's control of finer muscles weakened daily. He suffered from boils, too. When I entered the home, hoping to get some assistance on the cigarette question, such a sight greeted me! The older brother, intoxicated, threw a box of cigarettes down on their greasy table and was saying, "You smoke all *them* up in an hour or I'll lick ye!" Oaths punctuated. Tom replied, "but Miss Powers said"— "Take that!" and, with a terrible oath, my boy was kicked down the cellar stairs before my very eyes.

At the next session of the court those men were disposed of for a short term. Tom's habit, however, was fixed.

A week later the master called one morning to call an "important matter to my attention. Tom had just been seen in the Park smoking a cigarette!"

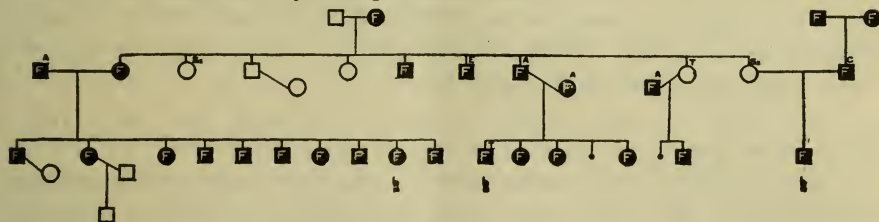
I'm sorry to say, Tom is past school age, and belongs to a gang of whom little good can be said.

From these cases you may imply that the blame for the mental condition of my F. M.'s is being laid at the door of Environment..

Not so. Environment is an immense factor, but in many cases wretched heredity is the cause.

May I quote Professor Johnstone's interpretation of why the sins of the fathers are visited upon the children even to the third and fourth generation, why, if God is just, he sends such children into the world?

I think the thought must have come to him when he heard the story of the teacher who told her mature class that everything has a use in the world. Johnny asked, "What are mosquitoes good for?" And she promptly replied, "To try our patience, dear!"



F—Feeble minded A—Alcoholic T—Tubercular Sx—Sexual Pervert E—Epileptic C—Criminal

Squares are males. Circles are females. Hand indicates children in my class. Case marked "C" was sentenced to State's Prison nine years ago for eighteen years. Assault on a young girl. Girl soon died. Gov. Foss has just pardoned him on half time!

Professor Johnstone made us sincerely believe that in these humble, wretched conditions we may be entertaining angels unawares. "Our children may be here as God's chosen messengers, bringing to us revelations of some of the deepest hidden secrets of life." Our difficulty is all in the interpretation of the message.

I've brought an heredity chart of three related families of my class—following somewhat the lines of Vineland study:

My boy hates his mother, who is away so much, and loves his "new" father, who teaches the boy all sorts of rowdyism and crime.

What depths of sea still surround our little islands of Special Class happiness and light. These islands of attempted remedial measures must eventually be flooded, unless Legislatures will protect and help us to build the dykes along constructive lines. In the meantime, all will surely be well, for "a little child shall lead them."

NELLIE E. POWERS.

What Special Class Training Has Done For One Little Girl

One morning early in September a knock was heard at my school-room door. Upon opening it I found a woman, indecision shown in her every movement, leading, or rather being lead, by a noisy, extremely peculiar and somewhat repulsive-looking child. Her hair was bobbed and of the harsh bristly kind, which seemed to stand straight out. All about her mouth were red patches, caused by an almost constant flow of saliva. The fingers of both hands were shriveled to the knuckles—the result of placing either one or both in the mouth nearly all the time.

The mother continued to ask, "What do you think of her? Can anything be done? Do you think I will have to send her away?" etc. I assured her I would do all I could.

The child, E., was assigned a seat. Afterwards she was given the Binet-Simon test, and found to be one year retarded.

Before leaving, the mother told me that she could do nothing whatever with E., that they were driven almost to the point of desperation with her at home. She also told me that E. was addicted to the habit of masturbation, and had been since the age of four. E. is now eight years of age.

E. could read a little when she would. She might read three or four words, or even half a page, and then stop, not necessarily because she did not know the word—she wouldn't even repeat it when told—she was sim-

ply mum.

No attention was paid to this. Someone else was called upon and much praise given, even if poorly done. Gradually these refusals to respond became less and less, until, in this past month (February), she has not once refused to read when asked. Her reading has improved so much that Miss R., the principal of the school, took her to read before the second grade not long ago.

The hand-work has been her salvation. Her hands have been kept busy, and her mind so thoroughly occupied with how to do things, that she has no time to think of self.

E. is thoroughly interested in all the work, especially the rhythm work and games, and is exceedingly anxious that all shall think well of her. "Do you love me?" is asked of one and all of us many times a day.

E. is very fond of J., a little boy in the class. She will walk up to him, "J., do you love me?" J., with a quizzical little smile, answers, "Ye-a, when you're dood."

E. could not and cannot yet speak plainly.

One day she was working at the board. She would make one letter, then turn about and make faces for the amusement of the class. I told her to go on with her writing. She replied something—I was not quite sure what—and made a face. She could make such impish ones, too. I went up to her and said, "What did you say?" E. tossed her head and very emphatically replied, "I said 'Sut up'" (Shut up). I very quietly said, "I do not know that word. I never use it." She seemed puzzled, but I have not heard her say it since.

E. is very active and has much surplus energy. When she first came she would run into the room, slide halfway across the floor and land in her seat with her heels in the air.

Her tasks are soon completed. She will then rush up to me with, "I am through, Miss A.; what shall I do now?"

E. dearly loves to sing, although almost a monotone. She comes from a distance and occasionally is late. Should we be singing when she arrives, the door will open and she will join in with us and go singing to her seat.

Anything ridiculous is appreciated by E. most thoroughly. A box of anagrams had fallen to the floor underneath a long table in our room. I asked E. to pick it up. She got down on her hands and knees, looked at the class, said "Dood by," and disappeared under the table.

Her latest escapade is spending her carfare for candy, then boarding the car with no money. She is often very noisy on the car, affording much amusement to passengers. However, her deportment on the street car is steadily improving.

E.'s appearance has so changed that a woman, who had lived a neigh-

bor to E.'s people in another city and who had recently been visiting in this city, meeting E. on the street, recognized her, but was so impressed with the change that she sought out the mother, and even the superintendent of schools, and told them both that she considered the change nothing less than a miracle.

Her mother reports that E. is much better at home, and tries to do more, as they wish.

I shudder to think what she might have become had she been allowed to continue the practice of her terrible habits.

The development of this case has indeed been most interesting.

“If I can let into some soul a little light,

If I some pathway dark and drear can render bright,

If I to one in gloom can show the sunny side—

Though no reward I win—I shall be satisfied.”

A SPECIAL CLASS TEACHER.

The Training School

We are so frequently asked for an account of what we are doing at Vineland that we present to our readers the following statement of the work, equipment and purpose of the Training School, together with an outline of the scientific work already done and the possibilities for more extensive work in the future.

The institution was founded twenty-four years ago to care for and train feeble-minded children. An Association was formed of persons interested in this work, and thru their efforts the work has grown to its present proportions.

It is *not* a State institution. The Association elects a Board of Directors, in which the management is vested.

The plant now comprises 250 acres of land, nearly all under a high state of cultivation; 26 buildings, including everything that is essential to an up-to-date colony for mental defectives.

There are 402 inmates of both sexes and all degrees of defect and of all ages. They spend their lives in the institution.

There is a carefully chosen staff of officers, caretakers and trainers, and consulting medical and paidological staffs.

There is a well-organized school, where the higher grades of children are taught whatever they can learn. There are shops and industrial rooms where the middle grades are trained to work with their hands and be as useful as their condition will permit. The lowest grades are made happy and as little a burden as possible. All this is good, and what may be found

in any of our best institutions for the feeble-minded.

It seemed to the management of this institution that something more should be done. In view of the fact that mentally defective persons are increasing in numbers, it is not enough to simply take care of such a part of them as can be taken into an institution. In view of the fact that they make up a considerable percentage of our criminals, paupers and other delinquents, it seemed as tho something ought to be done to get at the causes and to discover some method of prevention.

To meet this, a Research Department was established five years ago. This quickly justified itself, and since then it has become the accepted policy of the management that scientific investigation is the most important work of the institution.

WHAT HAS ALREADY BEEN ACCOMPLISHED.

The Department of Research has worked toward one idea—beginning with the ancestry—to obtain as complete a knowledge of each individual as possible, both while he is alive and after his death. He must be studied physically, mentally, physiologically, socially, pedigogically, while alive: after death he must be studied anatomicall, pathologically, structurally, chemically and microscopically. Data along these lines will enable us some day to correlate structure and function in a way that must yield valuable results.

In accordance with this ideal much data has been accumulated about each individual.

Much scientific work has been done which does not yet show results because it is of such a character that it must accumulate for years in order to have its greatest value.

However, some results are already secured.

A study of growth, based on the measurements of height and weight of 10,000 feeble-minded children from this and other American institutions, has revealed facts of considerable scientific importance. These children were divided into three groups according to degree of defect. It was found that the lowest grades deviated most from the normal and the highest grades least: the middle grades being intermediate. Thus it is shown that growth is correlated with intellectual capacity.

Another study has been made of voluntary action as seen in the strength of grip. This strength curve runs parallel with the curve indicating the intellectual grade of the child. Motor control is thus a measure of intelligence. Our present tendency toward physical training in the schools receives support from facts like this.

A study of weight at birth shows that feeble-minded children are heavier than normal children.

A study (unfinished) of puberty shows that the lowest grades are earliest and high grades latest in arriving at this epoch. This may throw important light on the much-confused question of the time of onset with

normal girls.

A study (unfinished) of one type of mental defective—the cretinoid or Mongolian—may show that it is the result of arrest of development in perhaps the second month of intra-uterine life and may result from shock. It is the type which appears in the highest social level and where there is no ancestral defect. The type is very fixed: never varying much in intellectual grade. This gives a most striking correlation between growth of mind and growth of body. Apparently if the arrest takes place in a certain month the intelligence never gets beyond a certain point.

A study of form (almost complete) has shown that the ability to master form develops rather early and is correlated with the curve of intelligence.

A study of number has shown that the number concept develops late and, as a rule, *never* develops in the feeble-minded. This has an important bearing upon the kind of teaching that should be given to backward and defective children.

We have studied the family histories of three hundred of our cases. We are now working these up statistically. We have been able to get facts that were supposed to be impossible of eliciting, in regard to the forebears of our children, sometimes even to the fourth or fifth generation. Many points in human heredity are being cleared up by these studies. A volume giving the history of a remarkable family is in press.

The neuropathological problem has also received attention. When a child dies in the institution an autopsy is generally allowed. (This is becoming more generally permitted as parents realize the importance of a knowledge of the anatomy of a defective child, and are made to understand that somebody's child some day will be the better for our having this knowledge.)

Fifteen autopsies have been held. Our equipment is not sufficient for this part of the work, and it must have been all lost had not the Wistar Institute of Anatomy of Philadelphia generously offered to take care of this part of the work for us temporarily. As yet we have been unable to study this material, tho a careful plan has been worked out by which it shall be studied to the greatest advantage.

(To be concluded)

From the Field

RICHMOND, VA.

I thought perhaps you might like to know how and what we are doing down here among the children who require especial training. Although this is our first move in the matter, I am sure it is with sincere earnest-

ness and a hope that greater things may grow from this, our humble start. There have arisen many puzzling things in our work, but I have tried to meet each with "The Vineland Spirit," which has proved such an untold help to me. I do not mean to say that I have not had my "dark blue days" about the work, but I strive to remember Superintendent Johnstone's warning.

On October 2, 1911, we opened the first public school in Virginia for backward and mentally-deficient children, known as the Ungraded Class in the public schools of Richmond. After testing a number of children, I visited the homes of fourteen to see their home environment. These were later examined by the Medical Examiner, Dr. Ennett. I have under my care these fourteen—seven boys and seven girls—who test from two to four years below normal. There are many more that need our attention, and we hope our experience may show the value of such a class in each building.

I have a large, bright room in one of the district school buildings, which is furnished with fourteen single desks, two well-equipped work benches, two sewing machines, maps, globes, and everything needful for school work.

We have a well-diversified curriculum, manual work and English classes alternating. Our manual work consists of bench work, basketry, sewing, knitting, chair caning and physical culture.

The children would hardly be recognized as the same sad uninterested little ones who came to us four months ago. They are happy and eager about their work and attend well. I cannot help feeling encouraged and hopeful, in spite of the great odds against which I know we still have to work.

I also know that when the Vineland spirit is once planted, all must sooner or later give way to it, so I am endeavoring to plant that "spirit of live and help live" which fills the very air you breathe in your school.

S. I. SCHERMERHORN.

TRENTON.

About a month ago I tested my class with the Binet tests. The results were as follows:

Years				Years			
Back	Male	Female	Total	Back	Male	Female	Total
1 year....	2	0	2	5 years....	1	0	1
2 years...	4	2	6	6 years....	1	0	1
3 years...	2	1	3	7 years....	1	0	1

My principal then requested me to test some backward pupils from the first to fifth grades, inclusive. There were 130 pupils. The majority of these were boys, as I only tested the girls in the first and second grades.

of the institution, dictating the same to one of his boy friends, who acted as stenographer. John is not able to read or to write. It gave him great pleasure to hear his own story read at the assembly, and as it is so typical of a child such as he (John is now 37 years old physically; 8.3 mentally), I am passing it on, believing you will enjoy with us John's history of the institution.

A. F. N.

THE STORY OF TWENTY-FOUR YEARS AGO AT THE TRAINING SCHOOL, VINELAND, N. J.

The old Maxham used to be the children's and family dining room, and the office was on the second floor. Us boys used to pump the old tank every night after supper from 6 to 8, and we used to have Assembly in the old Maxham.

Mr. Veale used to be my Sunday-school teacher. There was one big boy here when I first came, Frank K., and one girl, Sadie M., and three cows. Where Wilbur is standing now the barn used to be, and pig-pens and chicken coops used to be where the storeroom is now, and the old drug room used to be in the old Maxham and the storeroom used to be in the old Maxham, and the dry goods was in the old Maxham too.

The first teamster, his name Mr. C. He used to drive these two horses, Esther and Coeley, and the sweet potato patch used to be where Bridgeman is standing now. The woodshed used to stand where the chicken coop is now.

Mr. Veale used to be a farmer. The cornfield used to be where the Hospital is, and I used to help Mr. Veale husk corn.

These are the teachers who used to be here: Miss Bancroft, Miss Pane, Miss Blake, Miss Fish.

The barn used to be where the woods is and cow barn is in the same place. The cow barn and horse barn used to be together. The graveyard used to be where the cherry tree is. The first boy buried was Ellis Harner. He died in Keller attic.

The first time I worked here we went to Millville after a load of wood. We used to tie our cows out to pasture.

These boys used to be in the old band: Charlie A., Harry S., Bert D. Our band teacher's name was Miss Blake and Mike Casey used to be in the band.

I helped to dig the Cattell cellar and the first doctor we had here was Dr. Wiley.

Miss Annie had six boys and six girls, and Miss Vernon had the same. The school room used to be the first floor Wilbur and the laundry used to be on the first floor Wilbur and the power house used to be where the storeroom is and where the hospital is used to be a grape orchard.

Mr. ——— sent us the Hall Clock and the Hall Bell. Mr. Veale and I went after it and his father send 3 deer to the school.

Miss Smith used to be pantry lady in the old Maxham. Miss Reeves used to be Professor Garrison's clerk. These boys used to be in Mr. Veale's Sunday-school class: Harrison Porter, Bert Decain, John Ashmore, Harry Stevenson and John Findley.

The first night watchman was Mr. Harris. The club room used to be the school room and we had entertainments in it too. The back part of the zoo was our little stage, and these are the cottages' names: Wilbur, Seguin. The first cottage I helped build was Cattell; second, the Robison; then Hospital; then Maxham, and H. C. I helped to move that.

Where the Persimmon Tree is, is where Professor Garrison was born. The Seguin attic was the shoe shop, drill room, band room and the hospital.

In the band room we took lessons from 9 to 10. Miss Dunning was our band teacher then.

I think that is all I can remember now, but Henry K—— and I was always good friends.

JOHN A.

Current Events

February 27.—Meeting of the directors. They examined Garrison Hall with a view to erecting a new school building.

February 28.—Quarterly board meeting. Superintendent was given a month's vacation. Entertainment by Miss Kirk's and Miss Randolph's classes.

February 29.—Leap year party for the family; about sixty present.

March 1.—The Training School's twenty-fourth birthday.

March 2.—Miss Flowers entertained one of the boys in Philadelphia all day. Miss Eleanor Johnson, of the Public Education Association; also her field worker, Miss Irwin, came from New York to visit over Sunday.

March 3.—Dr. Maria M. Vinton, a medical inspector of New York City, visited.

March 4.—Mr. Hetzell attended a lecture at Michell's seed store in the interest of his work on the truck farm. Professor Husman, of the United States Department of Agriculture, gave a stereopticon lecture on grape culture, in Garrison Hall, before the Farmers' meeting.

March 5.—The Superintendent and Mrs. Johnstone left for a trip to Florida.

March 6.—Birthday party.

March 9.—Mr. Arnade gave a special supper to sixteen of the boys, as a reward for extra good work and conduct.

March 11.—We were glad to have another call from Mr. Lane, of the Ford Republic, Detroit, Mich. He was on his way to England in the

interest of a Republic to be started there.

March 13.—Contest. Sixty children took part; forty-five received prizes. New glass face put in the west side of tower clock, in place of wooden one.

March 16.—Children thoroughly enjoyed and appreciated Saturday store this afternoon. They had numerous orders to give and purchases to make. Mr. Brewster, of McClure's magazine, came to visit the School. Workmen have begun on a new bay window at Moore Cottage.

March 17.—Mrs. Nash left to spend a week visiting schools in Waverly, Mass., and New York City. Miss Bell left for school work in New York, and for State Conference, where we have an exhibit.

March 19.—Special assembly this morning. The evangelist, Dr. Ostrom, and party talked and sang to the children.

March 20.—Party for March birthday girls to-night.

March 22.—Birthday dinner in honor of Andrew S. and Sidney C. to-night. The dinner was served in six courses. Those favored with an invitation reported having been royally entertained.

March 23.—Mrs. Siegfried entertained two of the Maxham girls in Philadelphia. Half a dozen boys went to Vineland in the afternoon and enjoyed the entertainment at the Auditorium.

February 29.—This morning, when Florence M. asked if we would sing our prayer, Katherine said, "No, I don't want to sing my prayer"; to which Florence replied, "God won't like us if we don't sing our prayer, will he, Miss K.?"

E. L. K.

The American Association for the Study of the Feeble-Minded will meet at Vineland, N. J., June 3, 4 and 5, 1912.

The American Association for the Study of Epilepsy will meet at the same time and place to enable us to hold joint sessions in part.

REVIEW.

Seguin's "Idiocy."—We are just in receipt of a German edition of Dr. Seguin's famous work on Idiocy. This comes from the press of Karl Graeser & Co., and is translated and edited by Dr. S. Krenberger, of Vienna. Since no one can be considered "up" on the subject of mental defectives until he knows his Seguin, we are especially glad to see this translated into German, where it will be available for the hundreds of workers and teachers, not only in the institutions for feeble-minded in Germany, but also the teachers in the *Hilfsschulen*.

This volume also contains a brief account of the life of Dr. Seguin by Henry H. Goddard, and also an introduction giving an estimate of the work of Dr. Seguin by the translator, Dr. Krenberger. It is also an excellent piece of book-making, and it should have a great influence in Germany, and extend the fame of the father of our work for mental defectives.

The Training School

Devoted to the Interests of Children Requiring Special Care and Training

Edited by

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Delinquent Girls Tested by the Binet Scale

Louise Morrow, M. D. and Olga Bridgman, M. D.

There is current a popular idea that the cause of delinquency in girls is largely environmental; that every human "soul" is capable of redemption, and that, given a girl who has been a moral delinquent, or who has perhaps even been a prostitute, it will be possible to make out of her a normal woman, if only the proper methods of teaching and training are made use of. A very short period of time spent with these girls is sufficient to demonstrate that environment alone is not enough to have been responsible for their transgressions of the laws of society.

The State Training School for Girls in Geneva, Illinois, is the only institution for delinquent and dependent girls supported by the State of Illinois, and has on the average five hundred inmates, ranging in age from ten to twenty-one years. Girls are committed by the several county courts and a few are sent by the Federal Government. The offenses are varied, but the charge of immorality is by far the most important one. Of the last five hundred admissions, three hundred and seventy-one or more than 74 per cent. were committed for this reason alone, while of those committed ostensibly on other grounds, many had also lived immoral lives. The following table will show the different offenses and the number of girls committed for each.

Immorality	371.....	74.2%
Incorrigibility	50.....	10%
Dependency	46.....	9.2%
Larceny	25.....	5%
Truancy	4.....	0.8%
Drunkenness	3.....	0.6%
Sending obscene matter through the mail	1.....	0.2%
Total	500.....	100.0%

The second, third and fourth grades in the graded school of this institution are made up of girls from nine to twenty years of age; some of the eighteen- and nineteen-year-old girls can barely read or write, and their instructors experience great difficulty in teaching them to write even the letters to their relatives, with any degree of correctness in construction and punctuation. Of course, this is not true of all the girls here, for in the upper grades are found many who do work of a much higher type, but even most of these are far below the grades in which they would belong, if classified simply according to their physical ages. This deficiency is seldom due to ill-nourishment and disease, for as a rule the girls are vigorous and show few physical defects.

Frequently the courts which commit these girls fail to recognize the fact of their mental deficiency and irresponsibility, and consider their peculiar attitude as one assumed, perhaps for the purpose of concealing truth. Two sisters, aged seventeen and eleven years, were committed to this school on the charge of immorality, some months ago, and the officer who brought them told what difficulties there had been in getting these girls to give testimony against their mother in the trial which had resulted in their commitment. The girls were very deep, the officer said, and were exceedingly clever when it came to concealing damaging evidence. Sarah, the older of the two girls, is smiling and friendly and says that she has gone to the public school off and on since she was six years old, but has never been able to get beyond the first grade. Ida, the younger, has attended school for several years and is also in the first grade. When tested by the Binet-Simon scale as modified by Dr. Goddard, both showed great deficiency, Sarah testing five and eight-tenths years and Ida five and six-tenths years. Sarah's definitions were merely repetitions, and she failed twice to select the prettier of the two heads shown her; Ida failed even to copy the square and did not know left from right. In her cottage, Sarah's chief pleasure is in transforming every rag she can find into the form of a doll, and carrying it around in her arms, and for this purpose she will even take away napkins from the dining-room unless closely watched. Such deficiency as these two girls show can, of course, never be overcome, and instead of being clever at concealing facts, they rather lack the mentality to comprehend any but the simplest questions.

Sixty tests were made of girls selected for various reasons; some at the request of their teachers who wished assistance in classifying them in school; some because they seemed so low grade that it was considered advisable to send them if possible to some institution for mental defectives; and others who were chosen at random. The results were interesting and showed conclusively how little can be learned by mere observation and how inaccurate a classification will be unless controlled by some definite standard, by which each child is subjected to exactly the same series of tests. An

example of this is seen in Bertha A., who was admitted to this school a little more than two years ago at the age of fifteen years. She had been found in an old stable with two other children and a group of men and women, all of whom were living together there. Bertha could neither read nor write, was a timid, shrinking child and seemed very listless and stupid when questioned. Physical examination showed her to be very poorly nourished, but otherwise apparently normal. She was placed in school immediately, and having made very little progress, a year later was put in the industrial department because the teachers considered her absolutely incapable of doing even the simplest grade school work. In December, 1911, she was examined by the Binet method, and to the surprise of all, tested fifteen years. The result of this examination was reported to the school principal, who immediately put her back into the grade school to see what the girl could accomplish if watched and encouraged. Since that time she has progressed, so that, from being scarcely able to read and write she is now doing successfully fourth-grade work. So it may be seen that this child, because of her ill health, timidity and lack of training did not at all show what she was capable of doing and only when tested in a detailed way and induced to do her best was it realized that perhaps after all she might be capable of deriving much benefit from her school work.

One of the low-grade girls, Aurelia G., aged fourteen years, was tested with rather striking results. She entered the institution two years ago, did not know her own age, and although she was placed in school at once, and given considerable individual attention, was never able to do even the kindergarten work in a satisfactory way. The Binet test showed her mental age to be six and a half years; she could not be made to comprehend what was meant when asked to compare the weight of the three- and twelve-gram boxes, saying that they were both heavy; she could not copy a square, nor put together the two pieces of a rectangle in the proper way. Enumeration of the objects was all she attempted to do with the pictures; and she had no conception of left and right. Yet this child was placed here to receive a training, and at the age of twenty-one to be discharged from this institution, presumably equipped to take her place in the world. She is one of the many here who should be kept in an institution all her life.

Of the sixty cases tested, six were normal; fourteen, retarded one to three years; eleven, four or five years; twenty-nine, six to thirteen years. Of the six normal children, one was delinquent because of her family surroundings, two were simply dependent, and three were incorrigible, due to lack of proper home discipline. All six have been in this institution for more than two years, are capable and trustworthy, and seem normal in every way. Of the feeble-minded, that is, those testing less than twelve years, and with a retardation of more than three years, seventeen might be called imbeciles; that is, they test between three and eight years, and twenty-three Morons,

testing from eight to twelve years. The ages of the girls examined varied from nine to twenty years, the average age being fourteen and one-half.

So, in conclusion, of these sixty girls, only twenty at most will be able to take anything like a normal place in society, and of this twenty, some almost without doubt will fall at least as low as Morons. Yet unless other institutions are provided, at the age of twenty-one years they will all be set adrift with no one knows what sort of a future before them.

Summary of Tests

Mental Age	Physical Age.												Total
	9	10	11	12	13	14	15	16	17	18	19	20	
5			1		1				1				3
6						2							2
7	1	1				2	2	2	1	4		1	14
8					3	1	3	1		1			9
9	1	3		2	5	1	2	1	2				17
10			1	1	2	1					1		6
11					1			1					2
12							1						1
15				1	1	2			1				5
Adult										1			1
Total	2	4	2	4	13	9	8	5	5	6	1	1	60

Story of Diomedes and Alpha

Grace E. Morrell

Many people feel that mentally defective children need the three R's and need them badly. Arguing that there is where their greatest defectiveness lies, and so that is where they need most help.

The following story of two children of widely separated types may show how unreasonable such an argument is, and perhaps prove the wisdom of giving more training along manual lines.

Diomedes was nine years old when he came to us in 1905 from another charitable institution. He had received there one year in kindergarten. He was a most lovable little boy who won the hearts of all who met him until he indulged in a stubborn spell.

Alpha was ten when he came in 1902, from a comfortable home where he had every advantage possible. He is of the Mongolian type and so had none of Diomedes' good looks and pleasing ways, but he was a rather cute little boy. He, too, went to kindergarten as soon as he came to us and had had four years of training before Diomedes came.

The following extracts from school reports will show how the boys progressed with the same amount of time in school:

Diomedes.

October 17, 1905.

Has learned to braid raphia, weaves under and over one. Reads a simple sentence and spells a little. Has a bad habit of getting stubborn. May 11, 1906.

Has made a raphia frame and woven three small reed baskets. Cannot start his own work yet.

Made considerable improvement on cornet. Plays scale of C one octave. Can do all of the kindergarten work without help either by direction or dictation. Writes a nice round hand, spells a few words, but forgets easily. Does simple number work with help of a hand counter.

April 2, 1907.

Is now writing short stories in his Primer. Learns to spell quickly words of three or four letters, but does not retain the word long. Would do better if he did not get so sullen when corrected. Adds such examples as: 13 plus 21 plus 18 equals? Subtracts simple sums nicely. Is learning to tell time. Made a match safe and a small wheelbarrow with a little help. Can make a simple reed basket from beginning to finish, made a knotted bag, six small reed and one coil basket since September. Plays first cornet in second band. Stubborn once in a while.

Alpha.

May 26, 1905.

Is very active in his play, either in the gymnasium or on the play field. Has learned to cross over the horizontal ladder, hand over hand. Can sew a simple card, weave over one, under one, and can cut a little. Can fold a few simple folds.

Took part in the Kindergarten Entertainment, which part consisted of a rather difficult drill. Conduct much improved. Seems brighter in every way than he was last year.

June 2, 1909.

Has had basketry and English for several years, but the results have not been successful. Does not take kindly to school training.

November 1, 1910.

No results from training in basketry.

May 8, 1908.

Finished a plant stand. Made two stools, one being upholstered, polished and stained all three with but little help. Works problems requiring addition of hundreds with carrying, subtraction without borrowing, multiplication by two and three where it is not necessary to carry.

His reader this year will have a dozen stories about "the dog," "cow," "bear," etc. Draws quite well free hand. Basketry work greatly improved. Has woven sixteen reed and one coil basket. Work shows originality. Has played three solos on first cornet. Has few stubborn spells.

June 11, 1909.

Written vocabulary is small, can spell fifty to seventy-five words without help. Wove ten small reed and two large reed waste baskets **and a fancy knotted** this year. Quick in nature study work. Made a little paper rack having a dove-tail drawer.

March 9, 1910.

In sewing class his work is not very neat nor always polite. Does not try in English, talks most of the time. Does not try in Nature Class and insists upon whistling.

March 16, 1911.

Has made one knotted bag, two reed baskets, one melon basket, one Navajo coil tray, one trimmed basket and is working on a reed flower bowl. His reed work is perfect.

Work in drill is much better. Made a clothes tree, marked it out

March 16, 1911.

Knows more than we are able to give him credit for on account of his imperfect speech.

Takes part in games, tries to sing, often tells a story to class, tries to imitate Professor Johnstone. Very amusing. Not able to write or even learn to recognize a few words. Can name most of the objects in the schoolroom. Favorite sports are bean bag, playing with a football, pussy wants a corner. Always cheerful.

September 12, 1911.

Has just finished his first piece of work for the year in wood-work class. It is a key-holder made of three pieces of wood. Sawed and planed the pieces by himself, but had help in putting together. Has to be urged to do any work. Loses or tears his work in basketry. Stands and marches better, knows his place in line.

for himself. Has made three large pieces of work this year in wood-working class. Is now working on a medicine cabinet with a paneled door. English work is much improved.

April 23, 1912.

Is making a Morris chair, marking out all joints for himself. Is very exact in all his work.

Is able to put a straight even warp on our big rug loom with but little direction. Has woven six rugs, making a double fringe on each. Woven twenty-one reed pieces all very beautifully made. Is one of the most earnest workers in English classes, but cannot seem to advance very fast. Doing good work in first band. Developing finely in physical culture work.

Diomedes is now a handsome youth, sixteen years old, gentlemanly and of good standing among the other boys. He is doing almost a man's work in the manual and industrial lines, under direction, but is still struggling with the simple problems of reading, spelling and arithmetic. No doubt his training along purely mental lines has been beneficial, but in watching him work one cannot help the feeling that much of what he is using now is the result of a great need in his manual work, viz.: The number of stitches necessary in starting a skating cap, the exact dimensions of a Morris chair, the length of reed spokes for a basket having bottom and sides of a given size, or the number of yards of warp needed for six rugs of a certain length with four-inch fringe on ends. These problems are vital, the correct solution of them means accurate work, a thing Diomedes is quick to see and appreciate. If his knowledge of number is not sufficient to carry him successfully through and the needed help is not immediately forthcoming, Diomedes is discouraged and no power on earth can prevail upon him to continue a piece of work that he feels he has partly spoiled.

Alpha is twenty years old, not much taller than when he came, and in every respect a little boy whose hands we have been able to train a little in self-helpfulness. He can make a bed fairly well if encouraged and directed, dresses himself and does the simplest household tasks. Even the easiest manual work is too complicated, and, of course, the three R's mean less than nothing to him even after ten years of training. It hardly seems

April 23, 1912.

Is in second kindergarten. Marches quite well. Does simple dumb-bell drill under direction, throws and catches a ball or bean bag. Picks dandelion flowers in school garden.

necessary to compare either of these boys with the normal boy of a like age, for even Diomedes with all his winning ways and willingness to learn, would fall far short of the mark. Poor Alpha would be so much behind the little primary people that further comparison would be cruel.

From an economic and social standpoint the only hope for these children seems to be in institutions where they will be trained to be self-helpful, and in a few rare cases, self-supporting under direction.

The Training School

(Concluded from April number)

At present the staff of the Rerearch Department consists of the Director and eight assistants. Three of the assistants are at work away from the institution collecting family histories. The rest of the force are doing the work of testing and observing children—keeping up the routine work of casetaking—and working out a system of classification. Professor Binet, of Paris, has been working for years on the problem of measuring intelligence. He claims that it would be possible to devise methods by which we could rank men according to degrees of intelligence. Professor Münsterberg has said that we shall eventually give the child a few tests and then be able to tell for what he is best fitted and in what callings he will succeed. If these somewhat startling prophesies are ever realized they will be materially helped by studies of the feeble-minded. We are now making studies of tests and correlations between our tests and the child's ability as tested by experience, that we confidently believe will enable us to do for the feeble-minded what Professor Münsterberg predicts for the normal.

Several minor studies are in progress.

In the division of Medical Research much valuable work is being done. In this division we have had a trained physician who has devoted practically her whole time to research. We have made Wassermann tests of all of the children, also tuberculin tests, blood tests, urine analyses, as well as a complete physical examination of every child as he enters the school and periodically thereafter.

Most important experiments are being made in feeding various groups of children with glandular extracts in the hope of supplying something that may have been left out in their makeup and the presence of which is necessary for their growth and development. In at least one of these cases we are getting what seems to be hopeful results.

The foregoing is a very brief statement of the work up to the present time.

All the work thus far accomplished makes one thing clear. The central theme of all our work has been, and must be, heredity. From now on the problem of heredity among these children must be intensively and extensively studied.

The Carnegie Institution of Washington finds it profitable to study heredity among chickens at Cold Spring Harbor; it surely is profitable to study heredity in human beings at Vineland.

The Rockefeller Institute finds it profitable to carry on medical research by the use of animals; it is certainly profitable to carry it on among human beings.

Food laboratories are important adjuncts to science. Animal studies all yield valuable facts. Here we cannot only carry on similar studies on human beings, but we can carry on many of these studies on the same human being to his advantage, thus getting the complete understanding of the child in all his relations. The majority of these children spend their whole lives here. They can be under close supervision all the time. Often parent and child are found in these institutions.

As said above, our investigations into the family history of our children have yielded amazing results. The experimentation upon the child becomes doubly valuable in connection with that history. Imbecile parents probably always have imbecile children. If one parent is imbecile there are part of the children imbecile, sometimes more, sometimes less. What determines it? What degree of defect makes it unwise for a person to marry? Is alcohol a cause of feeble-mindedness? The histories already collected have given rise to many problems that could be solved if we could make a full and complete study of the problem of heredity.

The problem of growth in connection with heredity may be studied here as perhaps nowhere else.

The numberless problems connected with the nervous system and its heredity might well be studied. On the anatomical side findings must be correlated with the mental condition of the child. On the physiological side we have our food problems of all kinds; our bio-chemical work in metabolism and brain chemistry—to mention no other lines.

The effect of training must be studied. Given two similarly defective children, does parentage determine the trainability of either one?

The problem solved here in regard to training and education will have an important bearing upon the treatment of normal children.

Our Summer School that is now maintained for public school teachers may well be extended thru the year, and the results of these studies in the pedagogy of a primitive mind transmitted to the teachers.

For this intensive study of heredity and its meaning, much must be added to the present equipment. A laboratory building, a staff of trained workers, apparatus and a library are among the things needed.

But whatever is needed or whatever the cost, the opportunity to study these large problems on nearly four hundred human beings in our institution, and 15,000 through the already promised co-operation of the other institutions of like character in America, is so unique, so inestimably valuable that it must not be lost.

How Shall We Educate Mental Defectives

Henry H. Goddard

The history of instruction for the feeble-minded may be said to begin with the work of Seguin with the idiot. This, as everyone knows, consists more in physiological treatment and exercise than in intellectual instruction, but since we have begun to take into our institutions and to consider as feeble-minded, even when in the public schools, a much higher grade of child, the tendency has been to treat them much like normal children. Especially is this true of the children in special classes in America and the Hilfsschulen of Germany, where the course of study is nearly the same as the regular classes, the principal difference being that more time is allowed for accomplishing the required work, and a somewhat larger percentage of manual work.

A study of the evolution of methods in different institutions would undoubtedly reveal very different histories, but in the main it may be said that the earlier procedure was to devote a great deal of time and labor to instruction. This plan was followed later by a relapse when it was discovered that this instruction did not bring these children up to normal. Then it was given up entirely, and for a time practically no instruction was given. Then it began again with the feeling that something could be accomplished, although not as much as it was originally supposed.

In the absence of any definite data on the subject or any example to follow, it was but natural that the school departments in institutions for the feeble-minded should follow very closely the lead of the public schools, and indeed we find in many reports the highest boast that they can make is that their course of study is almost exactly like that found in the public schools. Two things have favored the continuation of this idea. First, the fact that even low grades can be considerably improved by sufficiently careful and individual attention, which always leads a teacher to feel that if the child does not progress as fast as he ought, it is because of the instruction and not because of the child. Secondly, the fact is that these children are capable of a good deal of parrot-like work, and can be taught

and trained to repeat and reproduce what is given them to a surprising extent.

Heretofore we have had no method of testing this parrot work, and consequently our teachers have easily been deceived into believing that it was real education and thoroughly worth while, so that we have to-day in most of our institutions, as well as in the special classes and Hilfsschulen, a great deal of it. The work is faithfully done by the teachers who believe in the methods because they know of nothing to the contrary, and believing also that the results obtained are quite satisfactory, and worthy of being continued.

On the other hand, two things have been entirely ignored. First, the fact of the enormous amount of time and patience it has taken to bring the child up to the point we have attained, and, secondly, the fact that, with all his attainments, the child is still a feeble-minded child. He is unable to take care of himself in the world, and usually unable to earn his own living, even under direction.

These children have been turned out into the world and have wandered; some to the almshouse, some to the jail, some to become criminals of one sort or another, a few to become hopeless, helpless incumbrances upon the home; but the authorities who have educated them have no further care of them and have not learned of the practical failure of all the instruction that has been given them.

Since sociology began to take its place among the sciences we have discovered that pauperism and crime are increasing at an enormous rate, and we are led to pause and ask, "Why?" Even a superficial investigation shows us that a large percentage of these troubles comes from the feeble-minded. As we look further we find in the community a great many individuals who have never been thought of as imbeciles or idiots, but who, nevertheless, are not sufficiently up to the normal standard to be able to care for themselves. These we have come to consider weak-minded, and as such should be taken care of by society rather than allowed to attempt to take care of themselves, with the inevitable result that they fall into pauperism or crime. Probably from 25 to 40 per cent. of our criminals are feeble-minded.

When we look further into this group of weak-minded people we discover that they go in families and that this weak-mindedness is truly hereditary. This leads us to question still further as to what shall be done in order to protect society from this growing evil.

The problem of the instruction of mental defectives cannot be properly considered without taking into account all of these larger facts and their relation to the whole great problem of society's method of dealing with the weak and dependent.

As long as we think it best to attempt to fit the child to make his

way in the world and earn a livelihood we must develop in him those powers which shall be of service to him by which he can earn his own living. But it will be wise to take into account the actual conditions and limitations of the child and not attempt to fit him for a work for which he has no capacity.

On the other hand, if society should conclude that the cost of maintaining these people at large with the inevitable result of increasing the number of them, is too great, and that we must segregate or colonize them in institutions where they cannot reproduce their kind, but where they must spend their lives under the direction and management of those of sufficient intelligence to care for them, then the kind of instruction they should receive in their early years will be modified in accordance with the work that they can be profitably led to do in such an institution. However, I believe experience will prove that these two methods will differ so little that one general principle may be adopted and such modifications employed as each institution may wish to use.

In the minds of many there is a deeper consideration which must at least be disposed of. This is the doctrine that intellectual work of whatever sort trains the mind. Psychologists have long been skeptical about the dogma of formal discipline. Certain transferences have been demonstrated by Judd, O'Shea, Bagley, Thorndike and others; but these are far from demonstrating that a defective mind is stimulated by drilling it on what it does not comprehend.

Certain it is that every institution could furnish from its records abundant proof that no amount of drilling its pupils on reading, or writing, or arithmetic, or memorizing, or any of these purely intellectual processes, so-called, has had any appreciable effect in developing the minds of the children who have received such training.

Our studies at the Vineland Laboratory have resulted in some clear-cut proofs of the truth of these statements. These I shall proceed to detail.

During the past ten years a large number of children have been given instruction in reading and writing. This instruction has continued from two to ten years. Of all these children only a very few can now read, either for their own comfort or that of their friends, in fact the great majority of them make no use whatever of anything that they have learned in the reading class. Perhaps the writing is even a better argument, for they are constantly encouraged and stimulated to do this by the demand of their parents that they should write weekly letters home.

Of the total number only a few even attempt to do this, and of this few still fewer can write even a creditable letter without copying it two or three times and receiving much help from the instructor.

The power of imitation is excellent in these high-grade children, consequently anything that they can imitate is very well done. Nowhere is this more clearly shown than in their penmanship. Give them a copy to follow and they will do it with painful accuracy, but take away the copy and ask them to write from dictation and it is generally found that their penmanship is wretchedly poor. Only a very small percentage have ever been able to learn to write a fair hand.

(To be concluded)

From the Report of the Committee on Provision for the Feeble-Minded and Epileptic

The greatest damage and the greatest expense for the future is found in the lack of care for the feeble-minded women of child-bearing age. It has been found that feeble-minded women average twice as many children as normals.

The Children's Bureau of Philadelphia reports 20 feeble-minded women who had sixty children by thirty-eight fathers. Chester County, Pa., reports that of 105 women delivered at their almshouse, 100 were feeble-minded. In our own State, 26 almshouses, with an aggregate population of 1,635, report 198 of these as feeble-minded, 38 children of whom 22 are illegitimate, are known to have been born of the women.

All recent studies make it evident that from 60 to 90 per cent. of the cases of feeble-mindedness are hereditary, with alcoholism, tuberculosis, syphilis, prostitution and law-breaking of every kind inextricably mixed with this condition.

In the 720 families studied by the three institutions there are many cases coming from good families where accident, sickness or other misfortune has caused the feeble-mindedness or epilepsy. But in the other families we find 3,093 persons known to be feeble-minded or epileptic, 6,375 known to be normal, and 8,251 undetermined. It is certainly penny wise and pound foolish for our Commonwealth to hesitate in taking care of at least those who are of such an age as to be able to bring into the world others like themselves, and this Committee urges the necessity of at once making adequate provision for such.

The feeble-minded and epileptic who are now in suitable institutions have all creature comforts, cleanliness, and medical attention. They are made happy by entertainments and games. Many become very helpful in household duties of every description. Some acquire a surprising proficiency with tools, learning carpet weaving, mattress and broom making, and the elements of carpentry, painting, dressmaking and tailoring. They are

effective workers as laborers on concrete work and road making, and on the farm and in the care of poultry and stock, they are when under supervision far superior to many a "hired hand." In these ways they contribute much toward their own support, reducing the cost of maintenance to a marked degree.

There are excellent school departments where the elements of reading, writing, etc., are taught to the small number who can really use this knowledge to good advantage. There are also in these institutions departments of research where most careful studies of the cases are being made. These include the tracing of family histories, full information of the social conditions in which these individuals are reared, careful and repeated records of their mental activities and examinations of the various body fluids.

But what of the feeble-minded and epileptics in the other institutions of the State? They are receiving creature comforts, to be sure, but there are no facilities for the other things. Many in the reformatory institutions are sent there for crimes committed because of the lack of moral responsibility. Arson, thievery, vicious attacks without apparent motive and innumerable immoralities are charged against these irresponsibles (so recognized by the superintendents of the reformatory institutions).

Records on file at the Chicago Juvenile Court show that $7\frac{1}{2}$ per cent. of the repeating juvenile offenders are epileptics, in whom the sexual instinct develops abnormally early and in a pronounced manner.*

No questionable case should be passed upon by any judge until a competent "research" examination of the prisoner is made and an abstract of the findings presented to the judge. In the interim the offenders should be distributed to institutions under a suspended sentence. By this method the incompetents would be sent to the proper institutions, where they might live out harmless, useful and happy lives. As our so-called justice is now administered to this class, they go in circles; crime, arrest, trial, imprisonment, parole, discharge, the possible breeding of others of their kind, and crime again. A most costly circle, entailing upon the community a burden of expense as foolish as it is unnecessary, and a pitiable injustice to the victim.

In the hospitals for the insane, the feeble-minded and epileptics are adding to the already overcrowded condition. They do not need the care of the expert physician and the expensive protected buildings—they want mothering, directing and the opportunity of the land. They need a job, with material found with which to work, instructions as to what to do, a place to perform the labor, some one to take care of the product, and

Eight hundred consecutive unselected repeated offenders show seven and half per cent. known epileptics, others suspected. They are the most dangerous and incalculable criminals. Pleasant one day, vicious the next, committing heinous crimes; about twenty per cent. of same group feeble-minded, most of them high grade and readily overlooked in court procedure; after all, fairly good talkers.

WM. HEALY.

encouragement—and they are useful and happy. The hospital for the insane does not furnish this.

In the almshouse, they lead lives of idleness and mischief. Numerous fires have been started to “see the engine come.” The other inmates often tease or impose upon them. The women in the almshouses are most pitiable. They go out in the springtime, live promiscuous lives during the summer and return in the fall to have a shelter in which to give birth to an illegitimate child—frequently feeble-minded. The story is common.

New Jersey has a compulsory school medical inspection law and the physicians are constantly finding feeble-minded in the schools. There is also a law requiring the establishment of special classes for backward children in every school district in which are found ten or more children three or more years below the normal, and wherever these classes have been organized it is soon found that many children who were supposed to be merely backward are actually feeble-minded.

Now that this retardation, which may be either backwardness or feeble-mindedness, has recognition in law it becomes important to improve our facilities for testing and so perfect the tests that they can be fully relied upon. We recommend that in all of the institutions where research work is being carried on, special efforts be made to try out the present methods of testing and devise new ones, until we may be enabled to determine satisfactorily who shall be treated as a responsible and reformable person, and who is an irresponsible, and as soon as a satisfactory method is found it should be made available to all.

If there are 282 feeble-minded in the reformatories of New Jersey, it shows a woeful miscarriage of justice, for these persons are not morally responsible—they act upon uncontrollable impulses—they form poor judgments—their reasoning is false and their will power so weak that they are lead by the wildest fancies or by evilly-disposed persons of stronger will. However, many of them have pleasant faces, fluent tongues and taking manners, and so they easily mislead judge, jury and prosecutor. Such a person finding himself the chief object of attention frequently exaggerates his crime in the telling until he is considered a hardened bravado, though he may really be a mental defective. In mere justice to our own common sense we must learn to recognize mental deficiency in all of its forms.

All of the facts relating to the inheritance of epilepsy and feeble-mindedness show that to properly safeguard our community, we must prevent the mating of such people, and to do this it is necessary to know where they are. We therefore urge upon all citizens to report to the Commissioner of Charities or to this Committee all cases of feeble-mindedness or epilepsy known to them. One of the functions of this Committee is to gather and tabulate such statistics.

Current Events

March 27, Dr. Wallace and Dr. Modell, physicians at the Waverly Institution, Waverly, Mass., visited. In the evening a Teachers' Entertainment was given by Miss Morrell and Mr. Kite. It was an enjoyable entertainment, showing the results of good training.

March 28, Dr. Faber, of Schenectady, N. Y., visited. Dr. Faber has recently been appointed Medical Inspector of the public school of that city. Miss Kreider, of Lancaster, Pa., visited to observe methods. Special classes are just being opened in Lancaster.

One of the Maxham girls gave a pleasant party for her friends.

March 30, Easter cards a specialty at Saturday Store.

April 3, Mrs. Goddard entertained the "family" and about 150 children with an illustrated talk on Oberammergau and the Passion Play. It was most interesting and instructive.

April 5, Professor and Mrs. Johnstone returned from their vacation.

April 6, A quantity of Easter packages received for children.

Two boys of Woodworking Class enjoyed a visit to a gage factory in town.

Easter egg dyeing parties held in all of the cottages. Children having good O. K.'s were allowed to do the "dipping."

April 7, A very full and interesting Easter service. Girls were attractive in their white dresses.

April 10, Professor Johnstone took the members of his large "family" for a trip through Florida. He illustrated his talk with the Mirror-scope, using the many colored postals he had brought back with him for this purpose. After the completion of the trip the "family" gave to Professor and Mrs. Johnstone a reception in the Upper hall.

A Victrola, bought for Itard Cottage boys, gladly welcomed.

April 14, Dr. Thomas, Rev. Ingram and a gentleman from China, talked to the children in Assembly.

April 19, Alexander Johnson came for a short visit. Talked to the Attendants' Class.

April 20, Dr. Goddard and Mr. Nash attended the Summer School Alumni Luncheon at St. Denis Hotel, New York.

April 21, At Assembly the Superintendent talked to the children of the lesson to be found in the wreck of the Titanic. Mr. Baker also spoke.

The Training School

Devoted to the Interests of Children Requiring Special Care and Training

Edited by

E. R. JOHNSTONE, HENRY H. GODDARD, Ph. D., ALICE MORRISON NASH

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The Form Board as a Measure of Intellectual Development in Children

Henry H. Goddard

The Form Board is one of the many good things that we have inherited from Seguin. Some of the original boards used by him may be seen at the Seguin School in Orange, N. J., and at the Waverly School in Massachusetts, possibly also at some of the other early American institutions where Seguin worked so helpfully.

Seguin, however, used this apparatus not as a test of intelligence, but as a means of training.

More recently, Dr. Norsworthy, of Columbia University, embodied it among her tests as described in her *Psychology of Feeble-Mindedness*.

Our present board is a slight modification of the one used by her, the most important change being the substitution of a star and cross for the hexagon and octagon of her board. We found that the similarity of these to the circle made an undue difficulty for defective children. Furthermore, it was difficult to prepare the board so that the octagon block would not fit in the hexagon hole or *vice versa*. This interfered seriously with the tests, since the child getting the block into any hole was satisfied, whether it was the right hole or not.

The board that we use is sufficiently indicated by the accompanying picture. It may be called the standard Form Board, having been adopted by practically all who are using a form board. We have furnished exact patterns of our board to many people, as also to Stoelting & Co., of Chicago, who now manufacture them. This standard board is 14 inches wide by 18½ inches long. The holes are cut into this a half inch deep and the blocks are of seven-eighths wood, so that, when in the hole, they project three-eighths of an inch. This enables them to be easily removed. The blocks are alike on both sides and of darker wood than the board. The holes

are stained inside the same color as the block. It will be seen that there are ten blocks of as many shapes and of such sizes that the ten fill the board, leaving, on the average, from a half inch to an inch between the sides of the different blocks. The relative sizes were so planned that no block will fit into any hole but the one for which it was made. The blocks are arranged as shown in the cut, three on the upper row, three on the middle row, and four on the lower. The board is always used in this position.

In use, the blocks are placed to the right of the board; the child is shown what is to be done by placing a few blocks in their proper hole and calling his attention to the fact that each block has a hole in which it will fit, and only one. He is then told that he is to start at a given signal and put each block into its hole as fast as he can. Then the watch is started and he begins, and the watch is stopped when he has finished the ten blocks.

We also record his every move in the following simple manner: The blocks and their positions are numbered. These numbers do not appear, but are learned by the operator. They are numbered beginning at the top from left to right, from 1 to 10. The examiner is prepared with a piece of paper with ten lines on it, and as soon as the child begins the number of the block that he picks up is put down on the first line. If he puts it in its proper place nothing more is recorded, and we proceed to the second block, putting down its number in the same way. If, now, he tries it in the wrong hole, we put beside the first figure the number of the hole in which he tries it and so on, as long as he makes false moves. When he finally puts it in the right hole, that figure goes down, and, being like the first one on the line, shows that he has finished correctly. If he gives up and tries another block, then the fact that that line is left ending with a figure not like the one that begins the line, shows that he gave up without putting the block in its proper place.

When the record is finished, a single glance shows whether he has put the blocks in without error (in which case there is only a vertical row of figures) or whether he has made a great many mistakes, in which case each line has in it two or more, perhaps even seven or eight figures, showing how many times he has tried the block in the wrong place.

In the results to be recorded later, we have given the child three trials and recorded his best time.

We have not yet studied the method of procedure in placing the blocks in the holes. Whether there is any significance in this we do not know, except in a certain general way. For example, it is very rare to find a child that hunts for a block to put in a particular hole. He picks up the block and then finds the hole that fits it. The lower the grade or the younger the child, the more absurd blunders he makes,—as would be expected.

We give here merely the curve of development in time as we have found it, in order that others who may wish to use the board may thus have a standard of comparison.

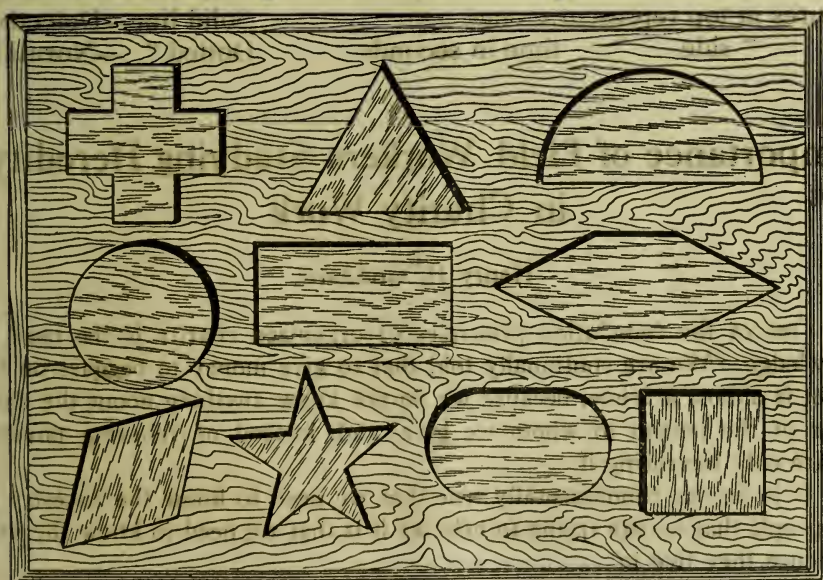
The solid curve shows the averages for defective children. The dotted line is that of normal children.

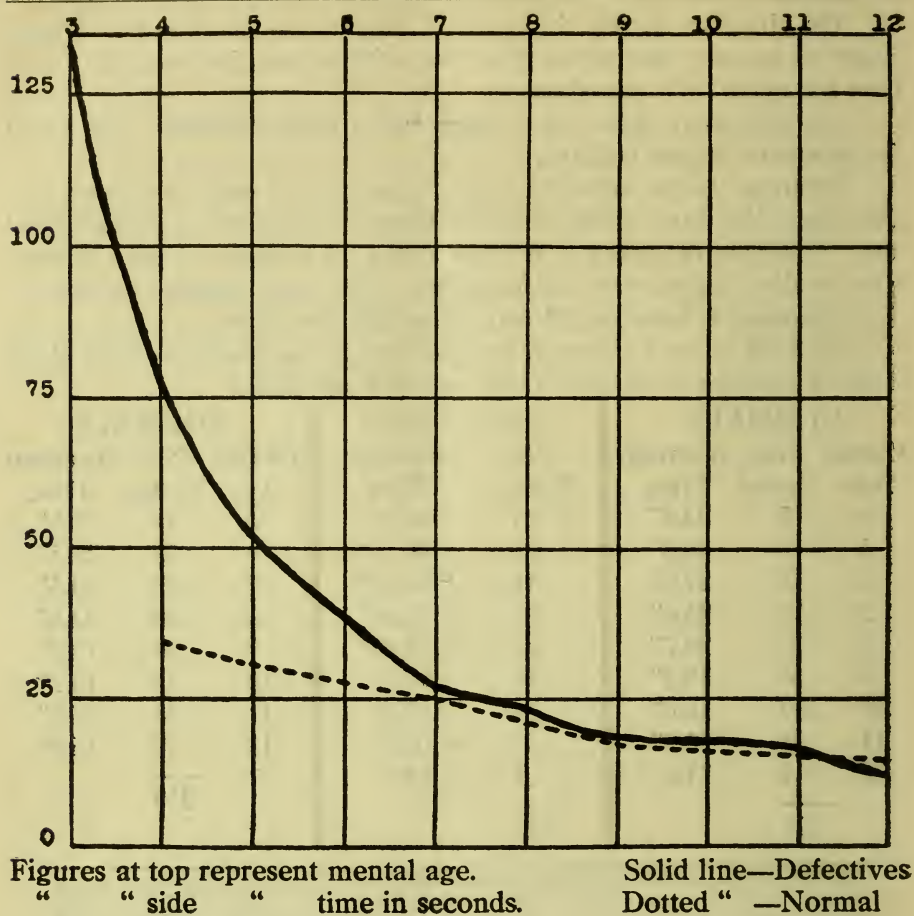
Reference to the table will show the number of each age, tested and the time. We have added also the normals classified by *chronological* age. The slight deviations in the time shows the presence of some children who are slow, backward or feeble-minded. They have brought the time up.

The study is based on 271 normals and 420 defectives.

We have in our Laboratory no other test that shows us so much about a child's condition in so short a time as this Form Board.

NORMALS			DEFECTIVES		NORMALS		
Mental Age	No. Tested	Average Time	No. Tested	Average Time	Chron. Age	No. Tested	Average Time
4	7	33.8"	53	76.12"	5	17	29.5"
5	7	30.3"	52	51.25"	6	26	27.5"
6	13	27.5"	54	38.24"	7	25	24.5"
7	47	25.4"	85	26.39"	8	28	21.8"
8	43	20.7"	87	23.80"	9	47	19.3"
9	46	19.2"	48	18.3"	10	49	18.2"
10	69	16.6"	29	17.5"	11	38	17.6"
11	25	15.9"	8	16.4"	12	20	15.9"
12	14	14.3"	4	12"			
271			420		250		





Importance of Field Workers Studying Heredity in Charity Work

Henry H. Goddard

One of the foundation principles of organized charity is the need of knowledge. We are continually told that to give money to beggars on the street is almost a crime, because we do not know anything about the character of the person to whom we give, and, instead of relieving poverty, we are only increasing it.

It is just as fundamentally true that we need to know the ancestry of the people that we are trying to help, as it is that we need to know the kind of house they live in.

A considerable percentage of the persons who come before the charity organization societies are people of bad ancestry. The people themselves may look well and may present, even to the skilled social worker, every outward appearance of being needy and deserving, of being cases where a little help would tide them over and enable them to come out all right and yet who are so handicapped by inherited traits that they never can live a normal life. The Society might spend hundreds of dollars in improving their condition for the time being, and a few weeks later they would be found in the same desolation, because they have not intelligence enough to make good use of what is done for them.

Recent studies in human heredity have shown that there are whole families that are so defective in mentality that they are constantly needing care and attention. They are wards of society. All attempts to rescue these people by the usual means are merely palliative. The money is as thoroughly wasted as is that which is given a fakir on the street. The only rational way of meeting this problem is to study the ancestry of these people and learn the condition of the entire family, and then act in accordance with that knowledge.

Field workers who are trained to recognize mental deficiency, either in the individual that they observe or in others concerning whose lives they are able to learn from living representatives, can solve many of these problems and furnish information that will result in untold good.

Dr. Davenport says: "This three or four per cent. of our population is a fearful drag on our civilization. Shall we, as intelligent people, proud of our control of nature in other respects do nothing but vote more taxes or be satisfied with the great gifts and bequests that philanthropists have made for the support of the delinquent, defective and dependent classes? Shall we not rather take the steps that scientific study dictates as necessary to dry up the springs that feed the torrent of defective and degenerate protoplasm? If only one-half of one per cent. of the thirty million dollars annually spent on hospitals, twenty millions on insane asylums, twenty millions for almshouses, thirteen millions on prisons, and five millions on the feeble-minded, deaf and blind were spent on the study of the bad germplasm that makes necessary the annual expenditure of nearly one hundred millions in the care of its product, we might hope to learn just how it is being reproduced and the best way to diminish its further spread.

"A new plague that rendered four per cent. of our population, chiefly at the most productive age, not only incompetent but a burden costing one hundred million dollars yearly to support, would instantly attract universal attention and millions would be forthcoming for its study as they have been for the study of cancer. But we have become so used to crime, disease and degeneracy that we take them as necessary evils. That they were, in the world's ignorance, is granted; but that they must remain so,

is denied."

That organization or that individual who shall take up the study of this phase of our social and charitable problems will be one of the greatest benefactors of the age. The time is ripe; the path has been blazed. We know enough now of the laws of heredity to enable us to interpret the results of our studies. No greater contribution could be made to our charity organization societies than to enable them to place field workers for the securing of this information. Five thousand dollars would keep three field workers for a year in any of our large cities. They would secure elaborate information on from a hundred and fifty to three hundred cases. This information would throw light on from three to ten times as many individuals, that will sooner or later come to the notice of the society, and who, with this information, could be at once disposed of intelligently and rationally, and in a way that would solve the problem.

There is no question that this is to be the next great step towards the solution of our social problems. The only question is, Who is going to be the first in this kind of work?

Little Dottie Dimple

Hazel Capner

Dottie is a little girl, eleven years old physically, and four years old mentally. She has an abnormally large head, deformed feet, and a very poor carriage.

When she came to me last year she had been trained in kindergarten work only. In this she was very slow, yet she was able to use her hands surprisingly well.

As she appeared to be so dull and diffident, with head drooped and hardly ever speaking, it seemed almost a hopeless task to expect to do much with her, and yet, because of her good finger work in kindergarten, we decided to give her special training in sewing, hoping, in time, to fit her to go into needlework class, and later on to be able to do some of the practical sewing of the institution.

I gave her, as her first lesson, buttons to sew on. This she seemed to like and learned rather quickly to do it. Next, I gave her stockings to darn, and it has taken four months of hard, patient work to teach her to do this, but now, at the end of that time, I feel fully repaid for my efforts, for she is able to darn stockings without any help.

As little ones of her ability soon tire of the same lesson, I am teaching Dottie to make needle-books, pin cushions, and little bags. In these she uses the hemming and over-hand stitches. Her stitches are small and even, and all her work is neatly done.

She is very ambitious to make a little white apron, which is to be her next piece of work.

If Dottie continues to improve she will one day be a valuable helper in the sewing room.

I find in all of my work with the little girls that I can get better results from the practical sewing lessons than from any other line of the special work.

Modified Binet-Simon Test

From Eighteenth Annual Report of the Managers and Officers of the Craig Colony for Epileptics, 1912.

During the past fiscal year all new admissions have been graded mentally according to a Binet-Simon modified test, similar to that outlined by Dr. Goddard. We have found this grading of much value because of its great accuracy. In addition to the new admissions, many patients have already been tested.

The following tables show the results obtained:

1.....	42	10	36.....	25	2	71.....	4	1
2.....	20	12	37.....	15	10	72.....	13	10
3.....	17	10	38.....	13	9	73.....	10	2
4.....	19	12	39.....	15	10	74.....	31	9
5.....	21	10	40.....	13	11	75.....	22	10
6.....	23	10	41.....	5	2	76.....	18	12
7.....	13	8	42.....	36	11	77.....	16	9
8.....	16	7	43.....	31	9	78.....	22	15
9.....	15	10	44.....	14	8	79.....	31	10
10.....	22	9	45.....	26	8	80.....	39	15
11.....	36	8	46.....	18	11	81.....	22	12
12.....	37	11	47.....	16	4	82.....	24	9
13.....	12	7	48.....	15	10	83.....	49	15
14.....	11	1	49.....	47	13	84.....	22	9
15.....	22	9	50.....	21	9	85.....	35	11
16.....	40	10	51.....	26	5	86.....	31	8
17.....	18	8	52.....	21	10	87.....	14	7
18.....	43	11	53.....	20	9	88.....	19	6
19.....	28	10	54.....	18	10	89.....	16	4
20.....	14	11	55.....	20	10	90.....	19	8
21.....	18	10	56.....	14	10	91.....	22	8
22.....	15	6	57.....	37	10	92.....	10	2
23.....	42	2	58.....	12	7	93.....	26	6
24.....	6	1	59.....	32	13	94.....	19	10
25.....	7	4	60.....	32	13	95.....	19	9
26.....	16	11	61.....	33	8	96.....	16	5
27.....	25	10	62.....	21	13	97.....	13	5
28.....	17	8	63.....	20	8	98.....	15	4
29.....	20	8	64.....	13	11	99.....	11	7
30.....	26	8	65.....	37	7	100.....	17	4
31.....	13	10	66.....	14	8	101.....	19	13
32.....	21	12	67.....	47	9	102.....	18	10
33.....	29	12	68.....	34	10	103.....	22	10
34.....	4½	2	69.....	10	4	104.....	17	4
35.....	50	4	70.....	18	2	105.....	18	3
						106.....	14	6

How shall we Educate Mental Defectives

Henry H. Goddard

(Concluded)

Let us consider number. There is nothing perhaps to which we are all so much slaves as to the idea that all children should be educated to manipulate figures. We teach this early and we teach it long, and yet there is perhaps no one subject in our whole course of study which yields such poor results; there is probably no subject for which so many children develop a positive hatred.

Seven years' experience as instructor in a Normal School has convinced me that a very large number of children somehow get spoiled for mathematics. I believe this is because they have begun the study too early. They have taken it up before their minds are developed sufficiently to enable them to comprehend and make good use of the instruction in that line. It becomes, therefore, of very great importance to discover whether this is a suitable subject for sub-normal children.

The topic is difficult of investigation, because it is possible for the child to imitate the sounds that are repeated to him, to memorize combinations and to appear to know something about the numbers with which he works. The extent to which it is possible to memorize elaborate combinations of numbers without comprehending them, is demonstrated repeatedly by trained animals. We have many cases of horses that have been trained to work out numerical combinations of surprising proportions. These are merely rote combinations associated with certain sounds or with certain movements or motions of the trainer. No one contends that the animal comprehends what he is doing, or is able to make understandingly any number combinations. No case has yet appeared in which the animal uses these numbers with anything like understanding.

But if this can be done with animals; even more may it be done with defective children.

Bearing this in mind, it is well to test any performances of defective children that seem like intelligent work and ascertain surely whether they are such or not. In December, 1907, and March, 1908, the writer published two articles bearing upon this question. The first one had been suggested by using Dr. Nosworthy's test for "semilogical memory." She has four sentences. Number I. *I have one head, two eyes, two hands, and ten fingers.* Number II. *I sit in my seat, I read from a book, I write with a pencil.* Number III. *One and two are three, three and four are seven,*

five and six are more than ten. Number IV. *In the morning I go to school, after school I play, at night I go to bed.* It was discovered by us that children who could do this test fairly well were invariably much lower in Number III than in any of the others. Oftentimes children who did the others perfectly failed on this third one.

This led us to investigate the cause. We became convinced that the difficulty rested in the fact that Number III deals with numbers. These are unintelligible to most of the children, and, therefore, badly remembered. We found, from a study of Dr. Nosworthy's article, that even with normal children there is a drop on the third question of from 4 to 10 per cent. below the others. Children of the various ages, who got from 80 to 90 per cent. of the others correct, get from 77 to 83 of this. She also tested seventy-six mental defectives of the very highest grade. The average made by these seventy-six children for the four sentences, respectively, is 65, 62, 43, 70, Number III being again more than 20 per cent. below the others.

We studied, with detail, a large number of cases in our school. I shall give you only one or two as an illustration. For example, a girl 19 years old has been studying and working with numbers here twelve years; can add, subtract, multiply, and divide; is relatively a very bright girl. Her per cent. of correct reproduction of the four sentences, respectively, is: 100, 100, 50, 90. A boy, 14, has been four years in the public school; has had number work for more than a year here; his record is: 40, 100, 32, 64. Another boy, 14, has had number work six years; can add and can subtract simple numbers. Record: 60, 100, 0, 67. A boy, aged 10, has had number work three years; can add a little. Record: 80, 100, 33, 100. As a result of this study we came to the conclusion that the number concept is very rarely developed at all in mentally defective children; when it does develop it develops late, and apparently with very little power. We seem to have an exception which proves the rule in the wonderful mathematical prodigies which occasionally appear.

We have suggested also that this late appearance of the number concept in normal children may account for those cases which find number work so hard in the schools.

Our second study corroborated this. Some eight years ago there was in the institution at Vineland a teacher of number work who had very great faith in the value of number work for the development of the mind. He accordingly trained the children until they could cover the blackboard with figures and add them without a single mistake. I suppose one could hardly look on such a performance without being inclined to say, "That certainly is marvelous training; great things have been accomplished." These children are still in the institution. It seemed to us that by examining them now and ascertaining the condition of their mind as to num-

ber we should discover something as to the value of this sort of training. We accordingly prepared a careful set of questions and brought the children in, one by one, and asked them to answer. I should state that these children are now from 20 to 30 years of age; they are excellent workers at the institution, and belong to our highest group; several of them are very often mistaken for employees of the institution, and even when told that they are not employees a stranger is inclined to think that they are detained in the institution without justice, nevertheless we know that they are feeble-minded and that they belong here.

The result of this investigation was that of eight of these children examined not one could handle numbers in any satisfactory manner. They could not answer such questions as how many are three and two; nine less seven. Not only could they not deal with these abstract problems, they could not even deal with concrete problems unless they referred to matters that were within their daily experience. For example, one of these is a young man 28 years old, who hauls coal. He could answer problems connected with his hauling of coal, but he could not solve the same problem if we substituted loaves of bread for loads of coal. In the case of the coal, we can see that it was so familiar to him that he could see it before his mind's eye and count it off from this mental picture as he would count straws in front of him, but never having seen a dozen loaves of bread together he was unable to visualize them, and unable to apply his numerical combination to them. It was apparent that all of the old adding of numbers on the blackboard was purely rote work; that the child memorized it as he would have memorized a page of Greek or Latin, which he did not comprehend. Furthermore, it seems to have had no benefit upon his general mentality, in any way whatever, neither in his ability to handle concrete numbers, nor the application to any other phase of mental work.

In this case at least formal discipline has had no value and has accomplished nothing appreciable for their development or improvement.

It is impossible to give in this paper all of the arguments. The foregoing must suffice to indicate the character of the studies that we have made, which have led us to our conclusion. That conclusion is this: It is a mistake to attempt to teach mentally-defective children either reading, or writing, or number work, and by mentally-defective children in this connection we mean those very high grades which are only recognized by the experts—those who make up the special classes and the *Hilfsschulen*.

Such children can be taught to do a great deal that looks like valuable work. They can make number combinations; they can go through the form of reading; they can do a certain amount of writing; but that they do this intelligently or can be made to do it intelligently, we are inclined to deny.

There are, of course, occasional rare exceptions in all of these lines, just as there are occasionally mathematical prodigies that can work wonders with numbers.

In this connection one is tempted to stop and ask, "What is there about reading, and writing, and numbers that has made the whole civilized world go so madly after them?" "What is it that has made us all feel that everybody should be able to read, and write, and count?" "Is it a real necessity, or is it only a fad of the time or of the century?" "May not one become just as moral a person without any of these attainments?" "May he not work as honestly and as faithfully at whatever he has learned to do and earn his living and contribute to the world's welfare, as well without any of these attainments?" If one is inclined to answer this in the negative, let him turn to his ancestors and see how far back he must go in order to find most important personages in the community, who could not sign their names or read the names when written; who could not count more than their fingers. The greatest civilization, in some respects, that the world has ever seen was made up of people who had no names for numbers higher than 10,000. It is not difficult to pick out from history many names of people who could do none of these things.

No one can deny that history is full of examples of people who have been great benefactors of their race that had little or no attainments in this direction. This being the fact, why is it that we persist in drilling feeble-minded children upon these things. We say that we want to prepare them for a place in the world, to earn their own living, and that in order to compete in the struggle for existence they must be able to do these things. They cannot get as good a position if they cannot read and write. True, but if they cannot learn to read and write, what then? We have ignored entirely the fact that we are not accomplishing what we attempted to do and that the children who had been thus trained went out into the world, and still failed to accomplish that which we expected. By not teaching them these subjects we are not depriving them of any rights, we are not condemning them to a life of uselessness. We are simply declining to harass them with those things that they cannot comprehend. We are saving the time which would be spent upon these things in order to devote it to something that is useful, something that does make them happy, and something that does enable them to do something toward their own support, even if they are not fully capable of taking care of themselves.

I should maintain that this holds not only for those children who are in institutions for the feeble-minded, but also almost as fully for the children in the special (ungraded) classes or in the *Hilfsschulen*.

If then we banish book work from these classes, "What shall we do?" The answer is clear: if we cannot train through the eye used upon the

printed page, or through the ear, we can train through the hand, and training children *to do things* is vastly easier and vastly simpler than training them *to read about things*.

We come then to the positive side of the argument. The one thing that fits all of these children, the one thing that draws out whatever is to be drawn out of them, is training of the hand, manual training, industrial training, these things such children can do with wonderful success. In this they are interested; this they do with great joy; it arouses in them a feeling of satisfaction at accomplishing something. Every one knows this, because all institutions and all special classes and Hilfsschulen devote some time to this sort of work. The only reason that more of it is not done is, I believe, because the persons in authority look upon this as a play, and not as mental development, not realizing that for this class of children it is the only thing that means mental development.

As we have argued, the child may learn a great many things by rote without ever thinking about them at all. He cannot do things with his hands without thinking about what he is doing, at least until he has done it so often that it becomes automatic.

We have, in this manual work, material for development which fits all grades. The low grade does the simplest things, the middle grade can be taught to do more complex work, while our highest grade finds here scope for all his faculties and abilities. He can use all the thought and intelligence and judgment that he can command, and always his work is ahead of him and leading him on. He works with interest and with joy, and leads a life as useful as it is possible for his defective brain to carry on.

I have had in mind, in the argument so far, the idea that these children were to go forth from the institutions or the special classes and attempt to earn their living in the world. I have done this because I suppose, for many years, this will be practiced.

I do not want to close, however, without entering a strong protest against this policy, and urging strongly that the only rational thing for society to do is to colonize these people and to care for them for life in institutions where they will be happy and as useful as it is possible for them to be. The crime of the age, from the social standpoint, is to turn these children loose in the world when they are 14 years of age, as is done in Germany, in England, and in the United States to a very large extent. We have now some institutions that keep these children for life. Many think that this is a large undertaking and practically impossible, but we must not forget that these people have to be taken care of somehow. They are in the world and must be cared for until they pass out.

It is certainly cheaper, as well as more humane, more rational and better for the future, to take care of them in institutions where we can

use their labor to the utmost advantage, rather than let them go uncared for and untaught in the community, eking out a miserable existence and calling upon society to help them even at that. This says nothing of the large percentage of them that become criminals, and so destroy even more than they cost otherwise.

So my answer to the question, "What should be the course of study for children in institutions for feeble-minded and for the *Hilfsschulen*?" is very quickly and briefly given.

It should be manual training first, last and all the time, manual training that is adapted to the child's special ability, manual training that will make him happy and useful, and contented, and that will solve the problem so far as it is capable of solution. We have in America several large colonies where groups of these defectives live as nearly a normal life as is possible for them to live. They do the work on the farm, plant the crops, care for them, and gather them; they do all the routine work of the old-fashioned farm, but always under the supervision and direction of an expert farmer, who is able to utilize their abilities to the greatest advantage. They are perfectly happy. The one great thing which society needs—that they should never marry—is also accomplished by this plan.

No one visits these colonies and studies into the conditions without feeling that here is the solution of one of the greatest social problems that is now facing our advanced civilization.

From the Report of the Committee on Provision for the Feeble-Minded and Epileptics

(Concluded)

This Committee wishes at this point to make record of the fact that it was the concerted action of the several thousand citizens, to whom this report is now being sent, which made possible the appropriations noted in the earlier part of this report.

The Legislature during its session in 1911 enacted laws providing:

(a) For the sterilization of certain feeble-minded, epileptics, criminals and other defectives.

(b) That Boards of Education ascertain what children are three or more years below normal, and requiring the establishment of Special Classes whenever ten or more such children are found in any school district.

(c) The medical examiners shall examine Special Class children every three months.

The New Jersey institutions are recognized as being progressive in all matters relating to the care and study of their wards. The research departments in the three institutions are gathering facts of the utmost importance in the proper understanding of the causes and treatment of epilepsy and feeble-mindedness.

One hundred and eighty public school teachers from various parts of the United States have been trained in the Summer School for Teachers at Vineland. This training is to fit them to better understand the backward, feeble-minded and special children found in the public schools. The demand for such trained teachers is so great that this work should be extended.

Perhaps the most striking evidence of the standard of work being done by the institutions of New Jersey is the number and character of visitors from other States and countries who come to study our institutions and their methods.

Such a standard would not have been possible were it not that the members of our Legislature have been liberal and wise in their treatment of the institutions, and a large number of thoughtful citizens and societies have aided in securing results. The mailing lists of this Committee includes nearly three thousand citizens who have used their personal efforts to secure proper care, study and treatment for the feeble-minded and epileptic of our State.

In presenting this report the Committee on Provision for the Feeble-Minded and Epileptic wishes to reiterate the policy outlined in previous reports for the comprehensive care of all the feeble-minded and epileptics of the State, viz.:

(a) Medical inspection of school children is now required in every school district. (Chap. 92 of laws 1909.) The medical inspection should go farther than merely to detect contagion, sanitary conditions, etc. Eye, ear, nose, throat and teeth should be carefully examined and all remediable conditions corrected.

(b) The primary children of every school district should be examined by the Binet Measuring Scale of Intelligence or something equally effective, and as soon as possible a method should be adopted which shall be uniform throughout the State.

(c) In every school district in which there are ten or more children who are four or more years behind grade there should be established special classes. (This has been accomplished, Chapter 234, laws of 1911.)

(d) Backward and feeble-minded children should be placed in such special classes as long as it is safe to keep them in their homes, and the training should be largely industrial and manual. This will relieve the State and the community of a great deal of the expense of their maintenance.

(e) All feeble-minded children of every grade (including morons,

imbeciles and idiots) who cannot properly be kept in their homes and sent to the special classes should be sent to the Training School at Vineland, where in so far as possible they should be trained for the lives they will live when they become men and women in years.

(f) All feeble-minded women of every grade (including morons, imbeciles and idiots) should be provided for at the State Institution for Feeble-Minded Women, where they shall find proper care and be given such profitable occupations as they are able to follow, such as small fruit and poultry raising, gardening and floriculture in summer, and needlework of various kinds, the weaving of stockings, underwear, carpets and rugs in winter; supplying not only their own needs, but also those of other wards of the State.

(g) All feeble-minded men of every grade (including morons, imbeciles and idiots) should be provided for at the State Village at Skillman, where they shall have proper care and be given such profitable occupations as they are able to follow, such as farming and even manufacturing on a small scale.

(h) All of the epileptics of every age and grade should be cared for at the State Village at Skillman, where there should be every facility for their scientific study, care, treatment and occupation.

(i) The scientific departments at the State Institution for Women and the Epileptic Village should have every encouragement, for the time for mere custody is past. This is the day of preventive measures, and nowhere is there such an opportunity to study means of prevention as in the institutions themselves.

Every public institution should be a laboratory for the study of its problems.

Review

HEALTH AND MEDICAL INSPECTION OF SCHOOL CHILDREN. By Walter S. Cornell, M.D. F. A. Davis & Co., Phila., 1912.

No innovation in our educational work has made such rapid progress or appealed so strongly to the public as medical inspection of school children. Indeed, it has progressed so rapidly that until recently there has been no adequate source of instruction for those who would take up the work carefully and conscientiously.

At last we have a book that gives the medical inspector the information that he so much desires. The author says, in the preface: "The aim of this book is to present a practical exposition of the work of medical inspection, born of the examination of some 35,000 children, and to give to physicians and teachers a survey of medical practice as it relates to children of school age."

The author has had wide experience and unusual opportunities for studying this problem. He has brought to his task a mind unusually keen in eliminating the unessentials and focusing upon the salient features in a way that is clear and concise, so that the six hundred pages of text and illustrations are crowded full of practical suggestions, demonstration and facts.

One hundred and fifty pages are devoted to medical inspection, under the heads of "Administrative Considerations," "Inspection of Children," "The Correction of Defects," "Results of Medical Inspection," "Present Status of Medical Inspection in the United States."

Nearly fifty pages more are devoted to hygiene, including "School Sanitation" and "Personal Hygiene." The rest of the book takes up "Defects and Diseases as Found in School Children," under the sub-heads of "The Eye," "The Nose and Throat," "The Ear," "The Teeth," "The Nervous System," "Mental Deficiency," "The Skeleton," "Nutrition," "The Skin," "Speech," "Infectious Diseases," "Prevalence of Defects and Diseases."

Over eighty pages are devoted to the important subject of "Mental Deficiency." In this very difficult field so new and untried the author is wisely conservative.

The inspector who follows the author's classification and characterizations need have no fear of making the mistake of calling normal children feeble-minded. Rather he will let many go by as "border-line cases," whom later experience in life will prove to be "incapable of independent existence."

The Binet tests are included, and some discussion of them. It seems to the writer unfortunate that the unrevised scale is used instead of the latest revision, not even Binet's revision being included. The author is hardly sympathetic with the scale and does it scant justice. He clings rather tenaciously to the old but now pretty thoroughly exploded notion that "malnutrition, adenoids, home illiteracy, or foreign parentage" may produce a backwardness of two or three years, and that if such cause is removed the child will return to normal mentality; therefore, these things must be taken into account in using the Binet Scale.

It seems to be nearer the truth that these things seldom if ever produce a backwardness that will show as much as three years by the Binet Scale, and in the rare cases where such a result may follow the cause has acted so long that restoration does not take place, and hence for all practical purposes the child is feeble minded.

That the Scale must be used with common sense and judgment is, of course, clear. But here again the reader who will follow Dr. Cornell's implications in this matter, will pass many a feeble-minded child as normal.

This book is undoubtedly the best thing that has yet appeared on the subject of medical inspection of school children and it will most certainly remain for years to come the medical inspector's *vade mecum*.

The Training School

Devoted to the Interests of those whose minds have not developed normally

Edited by

E. R. JOHNSTONE, HENRY H. GODDARD, Ph. D., ALICE MORRISON NASH

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The Story of Roy

Florence E. Mateer

Have you ever heard of an "institution rounder?" Do you know the type? Well, Roy is one and a typical one.

He and his twin brother, Rob, came to us in October, 1900, two little eight-year-old boys, just from the almshouse. With their brown eyes, light hair and rather pitiful faces they soon won a place for themselves in the hearts of sympathetic teachers and attendants, who strove in every possible way to educate them and lift from them the suspicion of mental defect.

From Roy's reports we have these significant and hopeful entries:

From Admission Blanks:

Age 8. Can help himself. Speech imperfect. Voice thick. Memory poor. Attention good, at times. Sight and hearing good. Nervous. Habits good. Can do errands. Can throw and catch a ball. Obstinate.

From School Reports:

December, 1900. Has improved a great deal. Quiet, but restless. Has never shown any temper in school. *Cannot stick to anyone thing.* Very observing, can match color and form. Likes to do errands and always does them correctly. Is good in sense work. Especially good at games.

Does very little. Strings beads and cuts paper. Will not work alone. Scribbles on blackboard. Bites points of pencils. More quiet. Quite an imagination. Good errand boy. Do not think he will ever do much in school.

June, 1901. Cottage. Is more obedient and not so quarrelsome. Tries very hard to please. *Seems delighted to receive a word of praise.*

October, 1901. Weaves over one, under one. Pastes rings quite well.

Can cut a design of his own quite well, and paste it. Is beginning to take part and show some interest in morning circle.

From this time on Roy, and Rob too, continued in school, gradually learning to do more difficult things. Roy, at the same time, became office errand boy. Both were capable and Roy, as reports say, careful when working for some one for whom he cared." Turning to the records leading up to the present time, we find that the problem of this boy has grown with his growth.

From School Records:

October, 1908. Drills nicely, behaves well. Enters into games with a great deal of spirit and likes to dance. Talks a great deal. Can write a very good original story. Can read quite well in the second reader. Recognizes more words, but it is hard for him to get expression.

June, 1909. Disposition has become so mean that in many places he has failed where last year he was doing quite well. Because of his bad language he has not done any work in English class for several months. Does fairly well in physical culture and basketry.

July, 1909. Is dismissed from barn where he was a good milker. Is now spending the afternoons working in the children's flower garden to keep him out of further trouble.

August, 1911. Can do good work when he is so disposed, but usually says, "I can't" or "I don't care." Very hard to win over, but when won will do anything within his ability until the next spell of stubbornness. Is working with the carpenter.

To-day his cottage report reads: Is obedient to those for whom he cares. Hard to manage. Needs close supervision. Can do anything if in the humor. Is careless, quarrelsome, cranky, excitable and cheerful.

With such a reputation, is it any wonder that he has become a "rounder"? His schedule is changed frequently, but no matter where he is supposed to be, he spends most of his time evading work and wishing he were allowed to work somewhere else. He has made the circuit of school, barn, laundry, carpenter shop, and then he has made it again.

Now he is scheduled two hours a day to a department where he really seems to *like* to work.

He has been made to like it. "How?" you say, "and if he has been made to like it there, why can't he be made to work elsewhere?"

The reason is not far off. For this two hours a day he is supposed to scrub and clean. A very prosaic task, indeed, but rarely has a day passed that Roy has not had the monotony broken by the gift of an apple, some candy or a cup of chocolate on cold mornings. Now and then, on rare occasions, after good behavior and good work for several days, he has even had that most highly prized, most delicious dainty—chewing gum! And all the time he has had on days of good work, on days of poor work, on

days when he would not work at all—praise, both for things done and for things left undone.

Since last October Roy's work for these two hours has been under the closest supervision and training by an employee, of whom he is very fond. But, in spite of this, if he is now left without supervision for one-half hour, all the old, slouchy, lazy traits appear, and Roy's work remains unaccomplished. One week, no amount of coaxing or "treating" was able to make Roy even begin his work. He loafed every minute and used such language that he was "discharged" from his two hours' work. He stood this just about twenty minutes, and since then he has been careful in his use of language, energetic about his work and cheerful. Is it worth while? Ought we to follow Roy all thru the day striving to raise him to a level of efficiency far above the highest ideal of which he seems capable? But you say, "He may be capable." Let us turn to his family and see if they are capable.

His mother was a feeble-minded woman. She and her six defective children, including Roy and Rob, were sent to the almshouse because her feeble-minded husband could not support them, and there she was burned to death. Both of her parents were feeble-minded, as were all of her five brothers and sisters and her numerous progeny. Altogether, there have been traced thirty-seven defectives in Roy's immediate family. All of them are shiftless and "just getting along somehow." Among these are two other children who are being cared for in the Institution at Vineland. Knowing this, need we expect anything better or different from Roy?

Many times Roy does things which are in themselves insignificant, but which show inability to direct his own affairs so as to conduce to his own welfare.

Not long ago he was given a fountain pen as a present, the next day he had sold it for 10 cents.

In scrubbing a room, he never discovers that, when he has finished it all but a little piece in front of a doorway, the rest could be done comfortably by going thru the doorway. Instead, he turns around and kneels on the part that has been freshly scrubbed.

Yet, his only complaint is, "I'd a had more sense if I'd gone to school more, but you see I was an errand boy and now I can't remember all them big words people use to talk."

Roy tested 8 by the Binet scale two years ago; a year ago he tested 8 and 3 points; to-day he tests 8 and 3 points. When we keep this in mind, it is far easier to deal with his faults and to remain undiscouraged by his failures.

Had we known years ago, when we wrote, "*Cannot stick to one thing*," and later on, "*Careful when working for some one for whom he cares*," that Roy would not "grow up" mentally, we could perhaps have made better

use of these traits.

Are there "rounders" outside institution walls? Do you know a man healthy, good-natured, incapable, always down on his luck, losing jobs cheerfully, feeling sure "somethin' will turn up soon," while the town eagerly gives him coal tickets, and free soup enough to enable him to marry and keep a family?

Is such a man more capable than Roy? How many jobs must he lose thru sheer incapacity before we recognize *his* lack? How long will we continue to stand by him and declare to an optimistic public that "All men are created equal"?

Extension of the Research Work

Those of our readers who have been in touch with our work from the beginning will remember the rather extensive outline setting forth the ideals of this research department. This ideal may be summed up by saying it was our ambition to be able to study the defective child from every possible standpoint. The attainment of this ideal has been slow, but, inspired by the creed of our superintendent that "one can have anything he wishes in this world if he only desires it with sufficient intensity and never forgets that he wants it," we have patiently persisted in doing the things that were nearest us and accomplishing whatever our means enabled us, but always looking forward to the time when we should be able to extend our work into other fields. We have waited only a little over five years until, through the munificence of a friend, we are able to add extensively to our program.

The past years have been years of organization or orientation, and of establishing sound bases and principles for future work. Our visible achievements are probably limited to two—the establishment of the accuracy and remarkable value of the Binet Measuring Scale of Intelligence, and on it basing a classification of defective children that is of practical value in institutions for feeble-minded and in public schools. This has been a fortunate achievement because it brings order out of chaos. The question of the grade of a child is no longer a matter of guesswork, but is determinable to a degree of accuracy that we hardly dared hope for when we began.

Our second work has been in connection with the heredity of feeble-mindedness. Not only have we established the fact of heredity in more than two-thirds of our cases, but we have studied and recorded the family histories of practically every child in the institution. This, again, is of most fundamental importance as a basis for more extended study of these cases. On the subject one book is already published, *THE KALLIKAK FAMILY*, giving the detailed history of one remarkable family, and another volume

which will give the result of all of the cases will soon appear.

Besides these two principal results much data have been accumulated that will be of value at any time that they are wanted. A great many measurements, both physical and mental, are available, and will prove of great service in the studies that will later be made. Starting alone in one small room, the laboratory has grown to six rooms. There are now four regular assistants and four student helpers. These latter are young men or women, some of them college graduates who come to work in the laboratory, helping us with the work, and in return learning the methods and getting an understanding of the problem of the feeble-minded.

The possibility of the extension of our work along other lines came early in the past summer when a good friend provided for the salaries of three trained assistants. The first of these was in the line of biochemistry, and after a careful searching of the field, we were able to secure the services of a man highly trained in this most difficult and important field. The appointee was Dr. Amos W. Peters, Ph.D., who came to us from the Carnegie Nutrition Laboratory in Boston, having formerly been at the Harvard Medical School and at the State University of Illinois. The meaning and importance of biochemistry in connection with our problem is explained by Dr. Peters himself in another article of this number.

From the beginning we have been able, through the co-operation and help of the Wistar Institute of Anatomy in Philadelphia, to hold autopsies whenever permission was granted. Through these much valuable information has been obtained, but the circumstances were such that we were never able to conduct these with the completeness and perfection that was desirable. We have also had the able service of Dr. Walter S. Cornell, Chief Medical Inspector in Philadelphia schools. He, with the assistance of a young woman graduate in medicine, has carried on several minor studies in medical research. This was mostly preliminary work, but valuable and important. But this again was never adequate to the opportunity. We are now able to prepare to see our ideals realized in this direction through the appointment of another highly trained man in neuropathology. After careful consideration we have appointed to this position Dr. C. J. Hickson, at present studying abroad. Dr. Hickson is a graduate of the University of Pennsylvania, was the founder of the Mills Neurological Society of that institution, has studied and worked in Pittsburgh and has spent two years studying with the most prominent men abroad. We are expecting that under his management the work of the medical research division will be all that we could desire.

After all, the problem of the feeble-minded is a psychological one, and there are more questions in connection with this phase of the subject than any other. It consequently became evident that we needed more psychological study. We have, therefore, added an assistant psychologist. We

have appointed to this position Mr. Edgar A. Doll, A.B., a graduate of Cornell University, who has taken extra courses in psychology, including laboratory psychology, has worked with Professor Whipple and Professor Titchener. During the past summer he has been assisting in the summer school at Cornell. Not having any administrative work, Professor Doll will be able to give his whole time to psychological problems.

Dr. Peters has already begun work, and a large room on the first floor of our building has been fitted up for his use. Dr. Hickson and Mr. Doll will begin the first of October, and thus will be inaugurated what we may call the second epoch in the history of the research work at Vineland. It begins under excellent auspices as to men and equipment. Our greatest difficulty at present is the limitation in regard to room. We must have a laboratory building in order to carry on our work with high efficiency, but we fully believe that this will come, and we hope for it in the near future.

Thus will be well organized the first, most extensive and best equipped research laboratory for the investigation of this enormous problem of mental deficiency.

A Department of Biochemical Research at Vineland

To the Training School at Vineland, N. J., belongs the credit for the first establishment anywhere in the world of a biochemical laboratory as one means of investigation of the problem of feeble-mindedness in children. To the writer of this article has fallen the honor as well as the heavy duty of testing what are the possibilities of biochemical research in the field of feeble-mindedness. The large problem which this unfortunate affliction of a considerable portion of humanity presents to organized society is becoming daily more evident, as its economic burden and its social consequences force themselves on public attention. Research on the problem is a crying need not simply from the humanitarian standpoint, but also as an economic necessity. The care and treatment of these cases and the governmental management of this problem including its ameliorment and prevention will in future rest on the basis of data obtained by scientific research. At present we are proceeding on a very small amount of such data and we are just discovering after some preliminary efforts made in the psychological direction how extensive and manysided this problem is. What assurance have we that our present method of dealing with the problem is in rational accord with the nature and origin of the condition? Our procedures are in the stage of costly empiricism and in the very infancy of

scientific investigation. It is therefore an important step forward when this institution ventures to add to its present psychological method of investigation that of the rapidly growing and fundamental science of biochemistry. The need for this additional method of attack and the tendency of expert thought toward it, is well illustrated by the following quotation from the words of a leader in the problems of psychopathology, Dr. Southard:

"The majority of cases of mental diseases are, I am convinced by special studies, characterized by the occurrence of obvious brain lesions, *i. e.*, even in the present stage of science they possess a structural pathology. Do they therefore possess no functional pathology? Their possession of the two aspects is a truism. Should we not study both aspects?

"Furthermore, suppose we learn that, whereas three-quarters of our cases of mental disease exhibit obvious irrecoverable brain lesions, another quarter fails to show these. Suppose the methods of microscopic research should still fail to show in many cases essential or irreversible brain lesions, should we not stultify ourselves if we did not abandon *for the research campaign* both that psychopathology which has taught us the main course of our disease and the neuropathology which has proved usefully negative? Should we not repair at once to the chemistry of metabolism, the physiology of internal secretions, and the entire point of view of psychopathology? Discoveries in the latter fields, concrete and pertinent facts, would carry us back to the tissues and back to the processes of the nervous system, to neuropathology, structural and functional and to psychopathology, and enlighten many dark corners therein. *He who adheres to the classical problems as they lie within the teaching divisions of any science is not apt to change the face of that science.*"

It is the method of science to develop the ultimate truth with its numerous and involved qualifications, which are due to the infinite complexity of nature itself, by means of *hypotheses*. These are repeatedly set up and repeatedly confirmed or refuted and replaced by others of better construction in view of previous experience. Whether the hypothesis was exactly correct or not—ultimately tenable or untenable—becomes a matter of no practical significance. *The testing of hypotheses develops facts*, and facts, demonstrated and adequately qualified truths, are the precious heritage of the race from previous human endeavor. Now, then, the hypothesis which underlies the use of the biochemical method in this problem is that which postulates, simply, a relation between pathological mental action on the one hand, and the physical condition of the brain and body on the other. We will not discuss this proposition—no, this hypothesis—with our readers. It is not worth while. We only wish gently to call their attention to it and to prevent them from shying at this subject on theoretical grounds. This,

* Southard, E. E. Psychopathology and Neuropathology: The Problems of Teaching and Research Contrasted. *Amer. Jour. of Psychol.* 23:230 - 235, 1912. Read by invitation in a symposium at the meeting of the American Psychological Association, Dec. 28, 1911, at the Hospital for the Insane, Washington, D. C.

then, is our generalized hypothesis, and it is clear that finally our logical efforts will be directed toward the correlation of data, psychological and biological, taken in their widest sense. This part of our effort will be small, however, compared to the requirement for painstaking and persistent experimental determination of facts which are the real values we are seeking. In this connection it should be noticed that the present literature of chemical biology contains numerous concrete examples of investigations which have an evident relation to the problems of psychopathology viewed from the broad standpoint of Southard, as above quoted. In future numbers of this journal we shall from time to time present our readers with notes and criticisms on this literature.

It is important that the general aim of this biochemical effort should not be misunderstood, nor its results misinterpreted. The primary and only initial object is to contribute toward the *elucidation* of the conditions of psychopathological action by means of the biochemical method. The curing of tuberculosis was an entirely premature and abortive expenditure of effort before the elucidation of the cause and conditions of that disease. When once these conditions have been adequately determined, valuable applications of the new knowledge always follow, and sometimes with astonishing results. But now we are only in the beginning of the period of strenuous seeking after much needed information. We wish also to emphasize that we regard the biochemical as only one, but after the psychological the next in importance, of the methods that are available for determining conditions of abnormal mental action. We picture our final understanding of these conditions to be a composite and correlated result obtained by different methods, none of which would alone have ever yielded adequate knowledge.

Now we are asked just what, concretely, is the field of application of biochemistry to the problems of feeble-mindedness.

This question could be best answered by illustrations from the literature of investigation along biochemical lines; but, as above stated, this we shall continue to present in future numbers of this journal. At present before we have actually begun our own experimental work, we can give only an outline of the topics we plan to pursue to such extent as workers and material resources permit. The field is so rich as to tax the judgment in the selection of the first attacks, and we are well aware that we are outlining more than our present resources permit to be done in the near future. Publicity and hearty co-operation with other individuals and institutions is, of course, our policy. In the present article, however, and at the very beginning of our work, we are describing only the nature of the work to be done without specific detail regarding particular problems or methods.

Our primary line of effort to which the others are logically related, is the study of the conditions of metabolism presented by the feeble minded of this institution. Very few studies of this nature have been made, and

the material for them is here presented under favorable conditions for investigation. Promiscuous examinations or experiments will not be made, but at first typical and psychologically well-known and defined cases will be selected. For orientation they will at first be studied in their undisturbed condition before the experimental factor is introduced. By metabolism we understand, of course, the sum total of the chemical changes which a living organism continually performs within its tissues and upon the substances which it utilizes. The progress of biological science has made the term practically synonymous with the processes of life in so far as they are non-psychical. Under this head we intend to subject the idea of intoxication whether endogenous (autointoxication) or exogenous to a rather thorough testing, especially in its relation to psychopathological phenomena. Two other related topics with which we will be compelled to deal in this connection pertain to the subject of glandular secretions and that of lipoid or phosphorus metabolism. It is well known that the method of glandular feeding is extensively practiced in psychopathological cases and institutions. It appears that this is usually done in a promiscuous way with but little of the elements of control experiments or of adequate therapeutic indications. In our future notes and criticisms on the literature, we shall treat this subject more fully. It seems a pity from both the scientific and the humanitarian standpoint that such potentially valuable experiments on human subjects should pass without an examination of their most important factor—that of the metabolism of the physiologically much affected subject.

Our second line of effort will be that of lipoid and brain chemistry. It will not be pursued extensively until we have obtained from the observations of metabolism and the third line of effort described below, some indications of what directions in this large and inherently difficult field it would be best to pursue. Contrary to the common impression, the present literature already shows the important and practical bearing of this little developed field of chemistry on the psychopathological problem.

A third kind of work which in the near future will become practically inevitable is the study of heredity, growth and development *from the particular angle of view of the psychopathologist*. It is well known how strongly the scientific and the public attention is now fixed upon the hereditary and congenital (if not hereditary) factors involved in the conditions of abnormal mental action. Without going into detail, we wish to emphasize the fact that the hereditary factor in this problem by no means removes it from the field of biochemical study, nor makes the pathological conditions any less amenable to elucidation by that method. In fact, the only real hope for the elucidation of the processes of reproduction and heredity seems, in the light of experiments already made, to lie in the direction of an intimate knowledge of the chemistry and physics of the protoplasmic basis of life.

AMOS W. PETERS.

Echoes from the Summer School

The Class of 1912

On August 16, 1912, there was graduated from the Vineland Training School the eleventh class of teachers there prepared to carry abroad the work for which the school stands, and to spread the "Vineland Spirit" through the world. It was a large class, graduating its entire enrollment of sixty-one, and needless to say it was the best ever sent out of the school, not only to its own credit, but to that of its earnest and able instructors.

Wide was the awakening and deep was the disturbance that came to the students in the first days at Vineland, as the many phases of the cases to be observed came to their attention. But under the careful guidance of the superintendent the noble and hopeful sides of the problem soon made their appeal and fired the class with great ambition and high ideals.

Day by day the students were stimulated to think in the open, unbiased spirit that characterizes the truly scientific work of Dr. Goddard; to observe with the honest, just, sympathetic attitude of Mrs. Nash, and to walk in the paths of encouragement and happiness as demonstrated by Professor Johnstone. Wonderful evening entertainments were given that afforded matter for thought and serious study in addition to giving great pleasure.

All too quickly the closing days drew near with final examinations, rehearsals for class night, and the thought of severing ties formed in the happy days of "Vineland Happiness." But the wonderful spirit of the school smoothed the way. The examinations were easy, for the instructors had instructed well. Great was the joy when Dr. Goddard announced—after all had studied for his exam—that he would accept the daily tests he had given in lieu of a final examination. Even the drudgery of class night rehearsals was lessened by the hope of final success. Thoughts of parting from friends were eased by promises to meet soon again, or to write ever and often.

Truly were the closing days happy ones. Class night was pronounced the best ever given at the Training School. The following morning the students and faculty presented an impromptu costume parade or pageant, which made the rounds of the cottages and the State Home, to the great pleasure of the observers and participants. Hardly was the carnival over when the class was called to attend in the deliberations of the Alumnæ meeting. Last of all came the night of graduation, when Professor Johnstone himself presented to each graduate the diploma that tells to others that its owner has drunk at the fountain of wisdom and inspiration, and is pre-

pared, yea in honor bound, to go forth doing honest work, arousing deep interest and radiating "Vineland Happiness."

It was a great class, the finest ever, thanks to its noble teachers. Long may its efforts continue and great may be its success!

MARY C. BREEN.

CLASS SONG—1912.

Music:—"Its a Long Lane That Has No Turning."

I.

For years we have always wanted
To find a splendid school like this,
And we heard one happy day
That good luck had come our way,
And that we had found a place of bliss.
We've studied in many schools, friend,
In North and South and East and West,
But no college did we find
That quite took up all our mind,
Till in the school at Vineland we took rest.

For—

CHORUS.

It's a school where they have no frowning,
And I think I can plainly say,
That we are all quickly learning
To be happier every day. "Oh, yes!"
It's a smile here at every turning,
At the same time we have to delve,
But we haven't cared—for *we belong*—
To the Class of 1912.

II.

From now on the Vineland spirit
Shall be cherished and adored,
And teachers we have met,
We will surely not forget,
And friendships formed be kept evermore.
But now that at last we've met you
We'll hold you always very dear;
And we tell you in advance
That we are glad to have the chance,
Just to gently whisper in your ear,

That—

CHORUS.

III.

So to you dear school at Vineland,
A fond adieu we soon will say,
With wishes for success
In your work so good and blest,
And to see you we'll return some day.
We leave with thoughts all inspiring
To go to homes, some far, some near,
Through our lives there shall prevail,
That which every one will hail,
Spirit of Vineland School so dear,
For—

CHORUS.

HARRIET E. MONKS.

Alumnae Meeting

A most successful Alumnae reunion was held at the Training School on August 15th and 16th. On our arrival we were greeted by Mrs. Nash and given the privilege of being "at home." Indeed, it would be hard to have any other feeling at Vineland. As we mingled with the students on the campus and in the halls, we could see groups of girls talking earnestly and mysteriously. Each conference ended in laughter and the disappearance of the group. This, of course, meant a class evening. It was a class evening so filled with fun and good feeling that even those of us who had not been there during the summer could laugh with and at them.

The next day illustrated that the observation of seeing the principle "give of the best that is in you" lived, had not been in vain and the students, faculty and visitors amused the children.

The Alumnae Meeting, which was held in the afternoon, was most important. The following officers were elected:

Miss Helen M. Hamilton, President, 38 Park street, Jersey City, N. J.

Miss Helen F. Hill, Vice-President, Philadelphia, Pa.

Miss Catherine F. Bell, Recording Secretary, Vineland, N. J.

Mrs. Edward Arnade, Corresponding Secretary, Vineland, N. J.

Miss Catherine Zusi, Treasurer.

Following the election of officers, Professor Johnstone suggested a plan which was adopted. It included the election of a corresponding secretary who has charge of the division of the members into sections, and the appointment of a chairman in each section who, in turn, should call a meeting of all the members in that section to elect a vice-president. It should be the

duty of this vice-president to plan for the work of this section and to report the same to the corresponding secretary. The section work should include mutual help to all those in the section. All teachers and the people of the locality should be impressed with the importance of the problem.

The members of the summer class for the training of teachers of backward children of the New York University were proposed and accepted as associate members of the Alumnæ Association. The dues for membership were reduced to 50 cents a year.

Those present from former classes were:

1903—Mrs. Edward Arnade, Miss Sophie Hall, Miss Cora Warren.

1904—Miss Fannie Bolles.

1907—Miss Eliza Carpenter, Miss Bertha Flowers, Miss Maida Leech, Miss Jane Shaw.

1908—Miss Catherine F. Bell.

1909—Miss Gertrude M. Fairbanks, Miss Helen F. Hill.

1910—Miss Catherine J. Bell, Miss Florence Sibley, Miss Helen Winstanley, Miss Hazel Capner.

1911—Miss M. A. Cosman, Miss Margaret Fitzhugh, Miss Harriet Johnson, Mrs. Alice Potter Humphrey, Helen M. Hamilton.

It is interesting to note that the class of 1907 had one-third of its members present, and that Miss Carpenter has only missed one Alumnæ Meeting since her graduation.

More important than all of the planned and unplanned events of the commencement or the reunion were the quiet grasp of the hand, the catching step across the campus, the minutes snatched from busy people's lives which meant glowing again with the fire of their enthusiasm, the smoothing out of all the problems and discouragements of the year, the renewed hope in the future of our work and the strengthened resolve that even these unfortunate children must have the chance of developing every bit of their resources for happiness.

Those of you who could not come can never know what you have missed, but we who do know what we have gained in this busy intercourse with those who are responsible for the Vineland spirit, hope to see you next year.

Our First "Commencement Parade"

Friday, August sixteenth, was Children's Day at the Training School—not Children's Day in the usual accepted sense of the term, but in the sense that there were no "grown-ups" to be seen that day. All had thrown dignity and decorum to the winds, as well as worries and cares, and the Summer School students and teachers and officers of the Institution became

as little children for the amusement of the real children. Dressed in costumes of every description, these grown-up children vied with each other to amuse the children, who had so generously and willingly given of their amusements and accomplishments at the morning assemblies and Sunday afternoon services.

Attics, cellars, barns, wardrobes—in fact, every possible corner was ransacked and made to yield up whatever it had that might help to make the parade a success; and it is surprising what a lot can be collected or invented in half an hour's time.

Within an hour after breakfast, the line of march, headed by our Superintendent dressed as Jabberwok (you know what the Jabberwok is, I am sure; if not, ask the Superintendent for his definition), began the tour of the grounds. Gypsies, Indians, suffragettes, ghosts, fairies, a bridal party made up of bride, groom, minister, flower girl and train bearer; a happy Irish family made up of maw, paw and colleens four; a backward brigade; a group of skeeter-skoots, clowns, Teddy bear girls, Japanese girls, a Dutch girl, a cowgirl, a Greek goddess, a witch, Peter Pan, farmer girls, Goddesses of Liberty, a boy and a lady—all moving in a long serpentine line over the whole place, gave the utmost delight to the children. Jabberwok scudded here and there, trying to frighten the unsuspecting ones, but a happy smile greeted him instead, and it became smile for smile. The bridal party brought forth shouts of delight from the children, who also enjoyed the fairies though they did not hear the flutter of their wings nor the tinkle of the bell this time. The clowns, darting in and out among the children, with their capers and pranks, probably amused them most of all, for to them it meant a circus—a real circus—and what child does not have thrills when he hears the word “circus”? And a circus it really was, both for those who took part and those who looked on. The line of march included a trip across the way so the girls from the State Home were given a chance to view the procession, and they, too, appreciated the fun.

We were all children and happy in our childish pranks. May we often return to the land of childhood, and thus keep close to those who need us most—the boys and girls with whom we work.

A. M. P.

Reviews

The Normal Child and Primary Education. By Arnold L. Gesell, Ph.D., and Beatrice Chandler Gesell, Ed.B. Ginn & Co., Boston, 1912.

Seldom has a book come to hand so readable, so sane and rational and calculated to give the exact help needed to the primary teacher as the one

before us. The authors are psychologists and pedagogues, and have achieved a remarkable success in applying the most up-to-date and well established psychological principles to the every-day problem of the primary teacher.

The book is divided into four parts. Part I: Historical Introduction includes chapters on Humanitarianism and the Child; the Scientific Interpretation of Life; the Scientific Study of the Child. Part II: The Genetic Background. This is an excellent division of the book, and will give the teacher that assurance which comes from knowing that her work is founded on basal principles. Part III is on the Pedagogy of the Primary School and the different chapters take up the various subjects that the primary teacher has to deal with, such as drawing, dramatic expression, language, reading, writing, nature study, etc., not forgetting discipline. In this part of the book the authors succeed to a wonderful degree in revealing the true spirit in which all instruction should be given. It is in no sense an old-fashioned book on methods, nor does it leave the teacher with vague and indefinite principles which she will find it difficult or impossible to apply. Methods are, indeed, indicated, but in such a way that the teacher is bound to have the feeling which underlies them. It is that feeling which insures success. Part IV is on the Conservation of the Child, and includes chapters on Pestalozzi and Home Education; a Healthy Body, a Healthy Mind, the Saving Sense of Humor, Formalism and Child Personality, Childhood and the Foundation of Youth. This, again, is a clear exposition of the underlying spirit of true education.

The book contains a bibliography, and appendix on the Montessori Kindergarten and an index.

The thousands of people who are puzzled and perhaps in doubt in regard to the Montessori method will find here a temperate and rational estimate of the thing which is of itself worth the price of the book.

This volume should be the handbook of every kindergarten and primary teacher, and everyone interested in the better education of the youth will want to read it.

The Kallikak Family. A Study in the Heredity of Feeble-Mindedness.

By Henry Herbert Goddard. The Macmillan Company, 1912. 121 pages.

This book is a product of the Vineland Research Laboratory. It is a story of the ancestors of Deborah Kallikak, a child in the institution. It is a graphic picture of the consequences resulting from the act of a young man of good family who, by an error in his youth, became the ancestor of a large family of defectives extending through six generations. It is an unusually conclusive proof of the heredity of feeble-mindedness, since this same young man later married a normal woman and they became the ancestors of a family of thoroughly normal people.

The contents are as follows: Chapter I, The Story of Deborah;

Chapter II, The Data Presented; Chapter III, What it Means; Chapter IV, Further Facts About the Kallikak Family; Chapter V, What Is To Be Done? There are eight full page illustrations and fourteen pages of charts, giving in graphic form the exact family relations of all the ancestors and relatives of the child in the institution.

All the Children of all the People. A Study of the Attempt to Educate Everybody. By William Hawley Smith. The Macmillan Company, New York, 1912.

Those who know William Hawley Smith will know exactly what to expect in this book. The first two chapters, "Born Short" and "Born Long," give a strong array of facts, showing what is now coming to be recognized, that all men are not created equal; but there is a great diversity of talent and that each individual child should be educated in accordance with his innate capacity, and that to attempt anything else is to fail utterly to educate all the children of all the people.

The scientific reader who starts out with the expectation of finding a scientific demonstration, that the different capacities that show in life are developed into children, rather than born in them, will be considerably disappointed and will, perhaps, be annoyed at what seems to be the underlying philosophy. Nevertheless if one takes the spirit in which the book is written and does not look for close scientific reasoning or a "philosophy of the books," he will find here much common sense. The book seems calculated to do much good for many people who will not read the more philosophical discussions on education, but will read this because of the familiar style in which it is written.

The author occasionally gets considerably beyond his depth, notably on the subject of idiocy. For example, when he says, speaking of idiots, "such children are 'born short' to the extent of idiocy, in some lines, while they are born normal or often 'long' sometimes to the extent of a little short of genius in other lines." This is misleading and confusing to those who are unfamiliar with the subject of the feeble-minded. Those who are familiar with the subject will recognize that he is speaking of a type that occupies a very small place among the whole group of idiots. We have the so-called *idiot savant* who is possibly more insane than idiotic. The idiot is never normal along any line, let alone being a genius.

The author is at his best when he sticks to his main thesis that because all children have not the same innate capacity, they should therefore not all be treated alike educationally. This point he reiterates in a great many different forms and often in striking ways.

The Training School

Devoted to the Interests of those whose minds have not developed normally

Edited by

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Method and Aim of Field Work at the Vineland Training School

Elizabeth S. Kite

Social self-consciousness is the distinctive note of the age. This, by many, is looked upon as a hopeful sign, ensuring better conditions for the future than have existed in the past while others see in it a symptom of our social disease, our consciousness proving that socially we are not functioning properly.

However, the case may be, for the past few years there has been an ever-increasing tendency to examine present conditions, with a hope if we are sick to correctly diagnose our malady, so that a proper remedy may be applied. For this social examination the doctors and alienists had no time; it therefore became necessary to send workers into the field to collect the necessary data.

In the Training School for Feeble-Minded at Vineland, the idea of a field worker was the natural outcome of two compelling forces: the application by scientists of the Mendelian law of heredity to human beings and the methods of applied psychology which in the past few years have revolutionized our ideas in regard to social problems.

It is by no means my intention, interesting as it would be, to go into an analysis of the work of the great scientist, Alfred Binet, whose premature death last autumn robbed the world of one of its most indefatigable investigators as well as of one of its most brilliant minds, but simply to touch upon it sufficiently to show its effect upon the development of the field work of our particular Institution. Some explanation of our methods seems at this time necessary, for the charts which Dr. Goddard publishes, as well as the statements which he makes, are both calculated to excite wonder and criticism in the minds of those unacquainted with the problem

he presents. Either feeble-mindedness is far more prevalent than has been dreamed, or else the field workers, who have reported the cases, are incapable of determining mental defect.

An article recently published in a prominent social journal brought out this particular criticism: "Was man in Walde hinein ruft, schallt heraus"; implying that having feeble-mindedness on the brain, the field workers for the Vineland Training School see it reflected in the faces of all whom they meet. The few normal individuals who appear on the charts have evidently been indiscriminately sprinkled in, to give a semblance of the particular case having been studied. Now we are free to admit that we are capable of error, and doubtless many errors do exist on our charts, but they are not often the ones of which we are suspected, for they consist, for the most part, in failing to recognize, and consequently to mark the highest borderline states of feeble-mindedness. To these cases near the borderline of deficiency, Dr. Goddard has given the collective term of *Moron*. It is in determining these states that our greatest difficulty lies. It must not be forgotten that the great work of Dr. Goddard and Professor Johnstone, of the Training School, is to have described and emphasized these high-grade defective states, attributing to them a large percentage of our incurable social evils. It was by no means an *a priori* theory devised to hide their ignorance of things, but came as the result of years of devoted study and patient working with boys and girls representing these types. Not until every known and devisable method for mind improvement had failed did they arrive at their conclusion that feeble-mindedness is in itself a type, presenting indeed, in different individuals, variations as great as the individuals themselves, but being one in this fundamental characteristic that the mentality slows down and stops developing before the age when normally the higher function of manhood and womanhood demand the higher functions of mind to guide and direct them. Physically such subjects may become perfect human specimens so far as outward appearances go, but mentally they remain permanently children of not more than ten or twelve years' growth.

It scarcely needs to be stated that no great skill is required to detect pronounced subnormal mentality. No one is long deceived by an idiot or an imbecile or even by a low-grade feeble-minded person, and since it is but a very small proportion of these which get into the schools, they do not present the most profound of our social problems. It is the high-grade *Moron* type that it is the chief business of our field workers to discover.

Of this type Binet says: "It is the high-grade feeble-minded who constitute the majority; it is the high-grade feeble-minded that we must learn to recognize in the schools when they are confounded with normals; it is they which cause the greatest difficulty to the work of education. The diagnosis of the high-grade feeble-minded is at the same time the most

important and the most difficult of all. Let us therefore examine the methods to be employed to facilitate their diagnosis." (L'annee psychologique. Vol. II, page 231.)

There are three ways, which Binet characterizes in the following way:

First.—The Medical method, which reveals *possible* signs of defect.

Second.—The Pedagogical method, which reveals *probable* signs of defect.

Third.—The Psychological method, which reveals *certain* signs of defect. (L'annee Psycholo. Vol. II, pages 194 and 244.)

The Medical method has for its end the appreciation of anatomical, physiological and pathological signs of defect. These include the *stigmata*, such as deformation of the cranium, size of the head (as micro-cephalic or macro-cephalic) deformed palate, peculiar formation of the ear, sub-normal temperature of the body, expression of the face, etc. These *stigmata* are not positive signs of sub-normal mentality altho they frequently accompany it.

The Pedagogical method seeks to judge of the intelligence thru the amount of acquired knowledge. This knowledge is of two kinds: that gained in school and that acquired from life. Naturally, the latter bears a closer relation to the amount of intelligence than does the former.

The Psychological method makes direct observations upon the degree of intelligence.

The monumental work of Binet consists in having conceived of the possibility of measuring the human intelligence and then to have laid down a basis upon which this measurement could be effected. Years before this concept formulated itself, Binet had been engaged in a profound study of the normal order of development of the human intelligence as manifested in the unfolding mentality of his two little girls. These studies supplemented by extended investigation among normal children in the public schools formed the basis for his work among defectives. We have innumerable studies superintended by him, giving measurements of the power of memory, of attention, of visual and auditory acuity, of tactile memory, of size, height and weight, etc. These studies, valuable as they are, served him but little in the formation of his "scale," for he clearly saw that none of them touched upon the fundamental basis of the intelligence. While on the whole, children of superior intelligence measured by groups higher in each particular than those of less intelligence, yet when taken individually, the deduction did not always apply. Thus (L'annee Psy. Vol. II, page 197) he says: "What difference, for instance, if the organs of sense function normally? What difference if certain ones are overly acute, or others respond to no stimulus or only weakly so? Laura Bridgeman, Helen Kellar, and their unfortunate rivals, were blind as well as deaf mutes, which did not in the least prevent their being very intelligent. . . .

The same is true of memory. . . . One can have good sense and lack memory. The reverse is also frequent. We are observing at this moment a girl who develops, before our astonished eyes, a memory very much greater than our own; we have measured it, that memory, and we are dupes of no illusion on the subject. Nevertheless, that poor girl presents the most perfect type of classic imbecility."

Before putting his "*Echelle métrique de l'intelligence*," before the public, Binet demands that we come to an understanding of what is meant by that very comprehensive word "the intelligence." To quote direct (*L'année Psychologique*. Vol. II, page 196):

"Nearly all phenomena of which psychology treats are manifestations of intelligence; a sensation, a perception, are intellectual manifestations just as much as reasoning. Must we then put on test all psychology?

"A little reflection has shown us that this would indeed be lost time. There is in the intelligence, it seems to us, a fundamental organ, one whose lack or whose alteration is of very great import for practical life, and that is the judgment, otherwise called, good sense, the practical sense, initiative, the faculty of adaptation. Judge well, understand well, here lies the essential force of the intelligence. A person may either be feeble-minded or an imbecile if they lack judgment; with good judgment they could never be either. The rest of the intellectual psychology seems of comparatively small importance by the side of judgment. . . . It results from all this that in the scale which we present, we accord the first place to judgment."

Armed with this central thought the Vineland field worker goes forth. The test against which each individual is to be measured is primarily a social test. Does the man or woman exercise judgment in his relationships in life? If not, is this lack due to unfortunate environment or it is inherent and incapable of being completely overcome? These are the questions which the field worker must decide, and it is here that her responsibility lies; for in the field it is impossible to apply Binet's precise scientific scale to every case. Subjective appreciation of mental states in spite of the fact that Binet rigorously opposes, and in season and out of season reiterates his antagonism to this method—does enter into the diagnosis of most cases. Nevertheless, we of the Training School, having had an insight into the problem guided by Binet's definite lines of demarcation, feel that our diagnoses rest upon a comparatively solid basis of fact.

As far as possible all the children of school age who appear on the charts are given the Binet tests in their class. It might be said in passing that care is always taken to prevent the child from realizing that he is the object of special investigation. After permission has been obtained from the proper authorities, the teacher is asked to send out, one by one, some of the brighter children of the class, followed by duller ones, in whose number the particular case loses itself. In this way hundreds of children

have been examined without rousing the least antagonism.

Scientific training, however, is only a part of the essential equipment of a field worker. The human mind is so sensitive an organism that it requires great tact for a stranger to induce it to unfold. Without this unfolding no correct analysis is possible. True as this is with normal subjects, it is even truer with sub-normals. Like children, they feel far more than they understand, and are swayed by impulses instead of by reason. To approach a sub-normal group in the spirit of criticism or of commiseration is to bar the way to any understanding of the problem they present. In a certain sense they are not to be pitied, for they are quite unconscious of being different from other people. Since they are lacking in judgment, they have no power of forming ideals and are therefore incapable of appreciating differences. Their sense of perspective is very slight as is also that of relative values; this tends to make them suspicious and all the more sensitive to the spirit which animates the investigator. Confidence once established they give themselves without reserve, blossoming like flowers in the warm sun.

The field worker must never forget that she is neither a missionary nor a reformer—her sole business is to do a work of science, which, in this particular case, is the appreciation of mental states. "Try to leave every family a little happier for your having visited them" has been the keynote of the instruction given us before starting out. "If you can make a subject happy you have gone a long way towards the understanding of his particular case." Nothing could be truer, and in the power to do this lies the whole secret of success in our line of work. "Is not information often refused"? we have been asked. "No; because we do not ask a question which the subject before us could object to answer; our first object is to get *en rapport* with the people we visit; failing in this, we wait for a more opportune time."

When it is question of near relatives of the child whose case is under consideration, no difficulty has ever been experienced. They are always glad to have direct information regarding the child. When they are only distantly connected, it requires more tact to bring about a friendly relation. It can be easily understood that results of field work in the country are far more satisfactory than in the cities. Rural communities are comparatively fixed, traditions are retained, while the native confidence of man for man has not suffered alteration, as is the case in our congested city districts. In going to a city home one must have a definite mission, while in the country it is often possible to come and go without in any way betraying the real object of our visit. Dropping in on a hot day and asking for a glass of milk or water, at once rouses friendly interest. Still better is to ask shelter from an approaching storm, or the opportunity to dry one's drenched clothing. The great fundamental human needs form a bond that

unites all classes. Even the most ignorant understand this. Spontaneous human sympathy brings out the very best that is in one, so that even the defective has experienced the truth of the saying that it is more blessed to give than to receive.

This leads up to another question that has been asked: "Do you ever give money or bring gifts of any kind?" For answer: "Absolutely never. We give nothing that could rouse the cupidity or selfish interest of a subject. We often send copies of photographs in return for the courtesy of allowing themselves to be taken or give the relatives a picture of the child at our school, but we never depart from the attitude of being there to receive and not to give, and we try to make them feel that they are giving us a great deal."

Again, it has been asked: "How can you decide that a subject who died fifty years ago was feeble-minded?" Surely you cannot give the Binet test to him!

The answer to this is long, but we will make it as short as possible. It can best be told in the way of illustration:

In 1861 the great-great grandfather of one of our girls died. He is marked feeble-minded on the chart. Before the case was made public more than a year and a half of intensive work was done upon that girl's family tree. Large cities and mountain districts, small towns and rural communities were repeatedly visited; church, family and county records were carefully studied, as well as every available genealogy and local history that bore upon the subject. Graveyards and their inscriptions were studied and more than a hundred individuals visited outside the many hundreds that appear on the chart. This by way of giving some idea of the work that was done in securing information; now for our reason in passing the judgment.

It was fifty-one years ago that the subject here cited died. Needless to say many persons now living remember him well, among them a long list of his grandchildren. When this investigation started, two of his own children were still living. The field worker became intimately acquainted with most of the these people, and it was from them that she learned of the deep impression which the old man had made in the community. The fact of the existence of this profound impression has been taken by some as proving that he was not feeble minded.

This deduction does not necessarily follow, but the fact of his having stamped himself so indelibly upon people's minds, added greatly to the interest which he aroused in us and first caused us to suspect what was afterward proven, that he was the degenerate offshoot of a good family. But why degenerate you still ask? Because we cannot judge otherwise from the stories which have come in from so many sources.

One credible witness relates how, when a girl, she was taken to drive

that she might see the hut where the "Old Horror," as she called him, lived with his daughters, "Old Moll," "Old Sal" and Jemima. How the windows bulged with rags and the whole atmosphere of the place was one of squalor. How others told of the way unscrupulous persons would buy the simple old fellow's vote for a drink, how another would give him cider till he fell intoxicated off the porch, etc.

Thus always, when definite memories exist in a locality of persons long since dead, we take the consensus of opinion of credible witnesses. When we can add to this a careful study of living descendants, who can be given the Binet test, and find similar characteristics marking them, we feel the case has been as good as scientifically proven.

In conclusion, we cannot but reiterate that while a certain amount of scientific training is absolutely necessary for the field worker to be able to form a just appreciation of mental states, yet for the whole problem of feeble-mindedness the essential is not to approach it simply in an attitude of cold science, but rather in that of warm human interest in the poor curtailed human beings who, through no fault of theirs, are distributed amongst us. It is only when they are approached in this spirit that the field worker can obtain real results.

How Did Feeble-Mindedness Originate in the First Instance?

We are so often asked this question that we are glad to quote the following answer from Popular Science Monthly for January 1912. It will be understood that this refers only to the hereditary cases. Editors.

Before we can answer the question as to the "cause" of feeble-mindedness it is desirable to get a clear definition of the term. As a matter of fact, very diverse definitions have been offered. An old legal formula is as follows: "He that shall be said to be a sot and idiot from his birth is such a person who cannot count or number twenty pence, not tell who was his father or mother, nor how old he is, so it may appear that he hath no understanding or reason what shall be for his profit or what for his loss; but, if he have sufficient understanding to know and understand his letters, and to read by teaching or information, then it seems he is not an idiot." While this definition lacks in completeness and scope, it has a more philosophical basis than many that are more recent. Of late the Binet-Simon tests of mental grade have aroused new enthusiasm and have been thought to give an exact, quantitative measurement and definition of the different classes of mental backwardness. The method is simply that of establishing a series of mental standards (questions, exercises, mental feats, and so on) for each year of school life, grading a given subject by these standards and finding the difference between the actual age of the subject and the standard age of the

highest test passed by him. This method of defining feeble-mindedness seems to assume that there is a greater mental resemblance between two persons deficient three years than there is between one who is deficient three years and one who is deficient four years. And that, it seems to me, is fundamentally erroneous. For the modern biologist is coming to rely less on the idea of races or groups and to realize that, in nature, we have only individuals, made up of collections of traits that are, for the most part, separately inheritable. Not individuals, but their transmittable characters, are the units of heredity. From this point of view we may say that feeble-minded persons are such as lack one or more mental traits that are socially important.

From this definition it follows that mental defectives differ quantitatively in the number of socially important traits that they lack and qualitatively in the kind of traits and the degree of their social importance. Defectiveness in one important trait only may be called uni-defectiveness; in two traits, di-defectiveness, and so we may have tri-defectiveness up to multi-defectiveness. For example, cases are well known of number-defectiveness, attention-defectiveness, memory-defectiveness, imagination-defectiveness, emotion-defectiveness, inhibition-defectiveness, moral-defectiveness, occurring quite without other defects. Well-known unit defects are word-blindness, figure-blindness, word-deafness, tone-deafness and color-blindness. Any of the defects may occur isolated or two or more of them together in one individual. Such defectives are often not recognized as such, if the missing trait or traits have little social importance; but if gentleness gives way to cruelty or self-restraint to self-indulgence the uni-defective becomes a "moral imbecile," and such a moral imbecile may be good at his school work and bright and active in most ways. It is, however, the multi-defectives that constitute the main problem of the feeble-minded; for they are fairly common and are a constant drag on that school system which is not adapted to their capacities. Yet among such may be good mathematicians, musicians, mechanics, etc. It is clear, then, that "feeble-mindedness" is not a simple trait, but a convenient group in which to put all of the socially inadequate.

Can we, in the midst of this heterogeneity, find any general "cause" of defectiveness in its varied manifestations? It seems to me we can discover such a cause by attending to various features of defectiveness. First of all, we have to recognize that these defects are in general *hereditary*. There are family strains with color-blindness, stuttering, word-blindness, number-blindness, and so on. The deficiency of the uni-defective comes from a defect in the germ-plasm of one or both of his parents. In a multi-defective, likewise, all the absent traits are the result of corresponding defects in the germ-plasm of the parents. And if both parents be multi-defectives that combination of germ-cells will be rare indeed that results

in anything but a feeble-minded child.

And, secondly, it is to be observed that "defects" are not pathological conditions; they are merely deviations from the normal condition of the adult. For every person shows these defects at some stage of his life and only gradually overcomes them. My nine-months-old son cannot talk, nor dress himself, nor attend to his animal needs. He is word-blind and figure-blind. He is cruel to the cat, appropriates to his own use the property of others, and insists vehemently upon having what he wants at whatever inconvenience to another. He is now a low-grade imbecile without moral ideas. He will prove himself not to be "feeble-minded" if, as he approaches puberty, all of these and the other socially important undeveloped conditions prove, under fair culture, capable of development up to the corresponding "normal" conditions. Defectiveness is thus a persistent infantile condition of one or more characteristics; a failure of certain socially important traits to develop.

Now there is a well-known biological principle that "ontogeny recapitulates phylogeny"—that the child in his development passes through the same series of physical and mental stages that the adults did in the successive generations of the race's development. So we may infer that man's remote ancestors did not go in their adult stage beyond the point where this infant-man is now. Indeed, the adult apes, nearest allies of our ancestors, show the same inability to talk, to dress, to regard property right and to be gentle and considerate toward others that the infant shows. And we cannot escape the conclusion that the gradual acquisition of social traits by the normal child follows much the same road as the evolution of social man from non-gregarious apes. But, there are men who never develop these social traits. And if we study the pedigrees of such men carefully (and many of them have been studied for six or seven generations) we trace back a continuous trail of the defects until the conclusion is forced upon us that the defects of this germ plasm have surely come all the way down from man's ape-like ancestors, through 200 generations or more. This germ plasm that we are tracing remains relatively simple; it has never gained (or only temporarily, at most) the one or the many characteristics whose absence we call, quite inadequately, defects. Feeble-mindedness is, thus, an uninterrupted transmission from our animal ancestry. It is not reversion; it is direct inheritance.

To summarize: Man is evolving and in that evolution he has lost some physical traits and gained some mental ones. But neither in their losses nor in their gains have all strains evolved to the same extent. Some races have lost the skin pigment, but others have made little progress in this direction. We are getting rid of our body coat of hair, but the Akkas of the Upper Nile and special smaller strains have a very hairy body, and so appendix and tail (coccyx) show variations that run in families. Likewise in the

acquisition of mental traits, whole races differ in their ability to speak, to count, to foresee. The Ethiopian has no more need for thrift than the tropical monkey and has not acquired it. It is not surprising that there are strains, even such as have a white, hairless skin, that have never acquired an appreciation of cause and effect, of the importance of controlling the sex-passion, of the necessity of regarding the rights and feelings of others. The marvel is not that these strains still persist, but rather that they have been so nearly exterminated.

This brings us to the subject of the control of mental defectiveness. We see at once that there must have been at work, even in prehistoric times, a sort of natural control by the elimination of those incapable of meeting the ever-increasing complexities of "advancing civilization." As man spread to the north those strains that had not acquired the trait of hoarding for the winter mostly perished of cold and hunger; those strains that had not acquired the sense of property rights and tended to invade the stores of others were always in danger of being cut off. In England, less than a century ago, there were 223 classes of offences punishable by death. Under such rigid selection "defective" ancestral strains tended to be eliminated.

To-day, in our most highly civilized countries, the process of elimination of the unfit animal strains is largely reversed. We protect, in an institution, the members of a weak strain up to the period of reproduction and then let them free upon the community and encourage them to leave a large progeny of "feeble-minded"; which, in turn, protected from infantile mortality and carefully nurtured up to the reproductive period, are again set free to reproduce, and so the stupid work goes on of preserving and increasing our socially unfit strains.

But a reaction is setting in. The legislatures of eight of the United States have already voted to permit the sterilization of defective persons. But it is doubtful if the "more advanced" public is altogether ready for such operations. A less drastic, but not less effective, method is the segregation of the defective strains during the entire reproductive period. However, the method is not so important, but in some way or other society must end these animalistic blood-lines or they will end society. **Dr. C. B. Davenport.**

By the splendid legislation of last session (the Mental Defectives Act) New Zealand now possesses that for which Eugenists in England have for years battled in vain, namely, provision for the permanent care and control of the feeble-minded. Since the average number of the family of the above type of persons is 7.3, the benefit to the Dominion of such legislation is abundantly evident. We are indebted for illustrations to the Eugenics Education Society (New Zealand branch), whose aims are well defined in the words of Prof. Karl Pearson, of the Galton Eugenics Laboratory, University College, London: "Eugenics is the study of agencies under social control that may improve or impair the racial qualities of future generations—physically or mentally."—*New Zealand Weekly Press.*

Feeble-Mindedness and Immigration

Henry H. Goddard

Since we have begun to recognize the appallingly large number of mental defectives among us, it is but natural that many people should conclude that these defectives are foreigners and even immigrants. So far as the writer knows, there are no adequate statistics to indicate that any one race or nationality is more inclined to mental defectiveness than another. Perhaps the nearest suggestion to it is the result of the investigation of the Royal Commission of England, which showed a somewhat higher percentage in England than in Scotland, and higher in Ireland than in England. However, the methods employed for making the determination may not have been adequate, and this does not seem wholly safe.

So far as the immigration of Europeans to the United States is concerned, of course, it is more than a question of the prevalence of defectiveness in the different races. It is a question whether the mentally defective are the ones that most naturally migrate. There seems to be a rather prevalent opinion that an undue percentage of the immigrants are mentally defective or, to put it the other way, an unduly large percentage of our mental defectives have come from foreign countries. In the opinion of the writer this is grossly overestimated and the actual number, if it could be obtained, would be found to be far less than is supposed. Of three large families of defectives in three different sections of the State which we have investigated at Vineland, neither one is made up of recent immigrants. The Kallikak family, an account of which has just been published, is of good English stock of the Colonial period. The nameless feeble-minded girl who brought the feeble-mindedness into the family is not referred to anywhere as being a foreigner. She may have been one of the class that was indentured to this country in Colonial times.

With a view to getting whatever light might be obtainable on this subject, the following questionnaire was sent to superintendents of institutions recently and the answers to it have been correlated. We knew that many of the questions asked were impossible of answer in most cases. We also knew that many institutions have no facilities for tabulating their results, and consequently it would be practically impossible to get the record. However, we hoped that in a sufficient number of cases there would be some data available which would give us some indication of the general tendency in this direction. The following table gives the results of our efforts:

Questionnaire

How many inmates have you?

How many are foreign-born aliens?

German Italians Russian Scandinavian
(Add others.)

How many of these aliens are of idiot grade? Imbecile

Moron Epileptic

If there are any concerning whom you do not know whether born in America or not, please give total number.

How many of these foreign-born alien inmates are known to have brothers, sisters or parents who are feeble-minded? Epileptic

How many inmates, themselves American born, are of foreign parentage?
Father Mother Both

Do you know if any of these (give number) are feeble minded?

Do you know if any of these (give number) are epileptic?

It is desired to know if any particular localities abroad are sending more defectives than others. If you know the place of birth of any of these patients or parents who are aliens, we shall be glad to have them.

Also, if you know even the approximate date of immigration of child or family, please give us what you can.

How many of these aliens does it seem to you ought to have been recognized by the immigration officers, and sent back? (We recognize that if the case was high grade, or was very young, we could hardly expect the officers to detect them.)

For how many of the parents of your children has the parentage (whether American or alien born) been determined?

Table I.

No. Institutions Reporting.	16	8	7
Total Number Inmates	11292	5182	5196
Total Number Birth Place-Unknown	263		
Total Number Foreign Born	508	246	220
Total Number Foreign Born Idiots	92		
Total Number Foreign Born Imbeciles	231		
Total Number Foreign Born Morons	95		
Foreign Born Feeble Minded Parents		83	
Foreign Born Feeble Minded Sibs.			26

Of sixteen institutions reporting, 11292 inmates were given as total population. Of these, there were 263 whose birth place was unknown and 508 who were foreign born.

Table II.

	ROME, N. Y.	INDIANA SCHOOL F. M.	LINCOLN, ILL.	LACONIA, N. H.	SPRING CITY, PA.	POWNAH, ME.	ELDRIDGE, CALIF.	WRENTHAM, MASS.	BOULDER, MONT.	N. Y. CUSTODIAL ASY.	RHODE ISLAND	N. J. STATE HOME	MINN.	LAPEER, MICH.	GLENWOOD, IOWA	N. J. TRAINING SCHOOL	TOTALS
German	5	2	8		7		4	1		18		7	5	16	13	2	88
Italian	5		6		6		8	3		6				1		1	36
Russian	2	1	21		31		3	4		10		2		2	2	4	82
Scandinavian		1	5				2	2		4			7	4	7	1	33
English	4		4	1	7		13	2	1	3	1	5	1	4	2	3	51
Belgium														2			2
Irish	1				4	1	3	1		7	1			1			19
Syrian														1			1
Scotch			1		1		1	3			1					1	8
Sicilian										1							1
Canadian	1		3		1	1	11	8		7				30	1	3	66
Polish	2		4							2				2	2	2	14
Austrian			4		6					9	1			1	1		22
Switzerland							1			1		1	1			1	5
So. American							2										2
Australia							2										2
Hungarian							1		1								2
Roumania	1				1											1	3
Portuguese							3										3
French			1	1	1		1			1		1		1			7
Chinese							3									1	4
Bohemia				5									2				7
Mexican							3										3
Holland				1										1	1		3
Lithuania				1													1
Finland														1			1
Greek					1												1
Armenian					1												1
W. Indies																1	1
Japan																1	1
Unknown	25						10	3									38
	46	5	64	3	65	2	71	27	2	69	4	16	16	67	29	22	508

From this table it will be seen that sixteen institutions have reported a total number of 11,292 inmates. Of these the birthplace was known in all

cases except 263, leaving a trifle over 11,000. Of these 11,000 inmates the total number who were foreign born was 508, or about $4\frac{1}{2}$ per cent., a surprisingly small number as it seems to the writer. When we consider that many of these admissions are for quite a large number of years, so that this 508 may be all of the aliens that have gotten into the institutions in the past ten years. When we look at the mentality of these 508, we find that 95 of them were morons or the high-grade defectives that no one could expect would be recognized as they came through the immigration line. Two hundred and thirty-one were of the grade of imbecile. Of these again, perhaps half might easily escape being detected. The 92 idiots would be clearly in the class that ought to have been detected and held up. However, when we take into account another fact, we see a further difficulty that nothing is known of the age of these children at the time of immigration. If they were infants in arms they would, of course, all of them get past the immigration officer. So that from this there is practically nothing on which to base a conclusion that any large proportion of clearly defective persons are escaping our immigration officers and entering the country.

We also asked the question, how many of these children had parents who were foreign born and feeble minded. Of course, this is rather difficult to get at, and unless heredity studies have been made, a very few institutions know either the mentality of the parents or their exact nationality. Nevertheless, eight institutions representing 5,182 inmates were able to give us some answer, and of 246 foreign-born children 83 had parents one or both of whom were feeble minded. This would seem to be a little more serious indictment against the immigration service since if the parents were feeble minded when the children were brought into this country, they certainly were old enough to have been detected, provided they were not morons.

A further question was asked: whether these feeble-minded inmates had at home feeble-minded brothers and sisters who were foreign born. Seven institutions replied to this, representing a total of 5,196 inmates and 220 children in the institutions. Among these there were 26 brothers and sisters of the patients who were also foreign born and feeble minded. Again, not a large number, but owing to the difficulty of getting the records of the brothers and sisters of inmates, it is undoubtedly much too small.

Our second table gives the answer to the question, "From what nationality do these defectives come?" The total number, together with the number in each of the institutions reporting, will be found in the various columns. The number from each country is at least roughly proportional to the number of inmates in the institution.

It would be very desirable to have accurate statistics on this whole matter, but for that we shall have to wait until our institutions are more abundantly provided with clerical help and until we have heredity studies in all cases, so that we may know the exact facts in regard to these matters.

Little Stories of the Children

James is one of our highest grade boys. He is 22 years old and has the mentality of a 10-year-old boy. He has had a great deal of training and usually hides his own childishness under an assumption of superiority and sometimes even of contempt. But when one watches, the boy in him crops out.

He works with the electrician, and one day he was sent to Keller to fix a fuse.

While he was there he heard one of the girls singing as she worked. She was singing, unconscious of his presence, a piece he had frequently sung as a solo.

After a while he could bear it no longer, but started at the top of his voice to whistle the same thing. Nor did he stop until his work was ended and he had left the cottage.

We had a heavy rain one night last week and, despite our sandy soil, large puddles stood here and there the next morning.

Maidie, 2 years old mentally, spied one beside Seguin Cottage on the playground. She ran at once for a bucket and mop, and when the matron of the cottage found her, five minutes later, she was mopping up the puddle just as fast as she could. Nor could she be persuaded to stop.

Harry is one of our boys who tests 8 mentally. Chronologically his age is 32. He has been here a number of years and is an efficient worker, doing as his daily work a good half of the cleaning in the school building. Needless to say, he is very devoted and loyal to Mrs. Nash, the head of the school department.

While she was away on her vacation this summer, a rush repair order came to the office from Harry. In it he stated that the clock in the school hall was broken and that he "was willing to pay for it from his own pocket to have it fixed before Mrs. Nash came home."

Of course, a man was at once sent to look at it, and in a few minutes it was ticking merrily. Harry had forgotten that clocks sometimes need winding.

Blossom is really 9 years old, but she tests only 3, and to us she is just a dear baby girl.

One day two of the laboratory students met her on the lawn. She knew Miss X., but did not remember the other's name. "Who is that, Blossom?" asked Miss X. Blossom did not answer, but she studied hard. "Which doctor is it?" asked Miss X. again, and, as if she'd solved the mystery, Blossom answered calmly, "Doctor Laboratory."

Current Events

September 3—Opening of the "Short Course for Physicians." Twenty members registered.

September 4—Miss Helen Hill, who for the past four years has been a valued employee in this institution, has accepted a position in the Juvenile Court of Philadelphia, Pa.

September 5—A social evening for the physicians and the members of the "family." A "Punch and Judy show," given by the Superintendent, was one of the very enjoyable features of the evening.

September 5—A baseball game, played by the Physicians vs. Training School Boys. Score, 8 to 9, favor of Physicians.

September 9—Opening of School.

September 10—The farmers of the vicinity held a meeting in Garrison Hall. Prof. Girolamo Malon, of the University of Milan, Italy, was speaker of the meeting.

September 11—Members of the Physicians' Course visited the State Home for Feeble-Minded Women. In the evening a children's birthday party in Garrison Hall. The physicians renewed their youth by joining in the merry-making of the evening.

September 12—An informal gathering in the Maxham Cottage parlors to celebrate Professor Nash's fourteenth institution birthday; also the closing event of the Physicians' Course. There were twenty men and women in the class. They represented many cities and States.

September 16—The Laboratory staff entertained the teachers at Kellar Cottage. Miss Dorothy Seward, of Vineland, came to study in the Educational Department for a month.

September 17—Boys canning tomatoes. The Cannery Department has spent a busy autumn.

September 18—Mr. Baker, Mr. Davidson and Superintendent Johnstone started north on a ten-days auto trip. In the evening fifty of our most appreciative girls gave a party in Garrison Hall. The Girls' Band furnished the music for the evening.

September 19—Moore Cottage boys took up their new residence in Linden Cottage.

September 20—Misses Bell and Mateer left for New York to do some special work at Ellis Island.

September 21—Mrs. Goddard entertained for the afternoon at her home in Vineland the girls who waited on table so faithfully during the Summer School. Misses Vernon and Hutchinson left for a two weeks' vacation at Wildwood Crest, N. J. In the evening Mr. Fleisher gave a party for his sister Ruth and her Vineland High School friends.

September 24—The Autumn Industrial and Department schedules of the children went into effect. Arthur U. had a special birthday party.

September 25—A musical evening for the children and employees. This was given largely by Institution talent, assisted by Miss Dolores Berault and Mr. Harold Bray, of Vineland, who contributed generously to the evening's enjoyment.

The Training School

Devoted to the Interests of those whose minds have not developed normally

Edited by

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A Plan for the Care of the Feeble Minded

E. R. Johnstone

The feeble-minded in the State of New Jersey can be cared for properly. The cost of such care is great, but if wisely distributed it can be borne.

1. All feeble-minded children under the age of 12 (or until they become dangerous sexually or otherwise) excepting idiots, should be sent to the Special Classes in the public schools. The parents will thus bear the expense of housing, feeding and clothing their own children for these years. The only public expense will be that of the school, and if the training is largely physical and manual, much good will be accomplished.

2. The following cities will upon investigation find enough feeble-minded children between the ages of 12 and 20 to warrant the establishing of a municipal institution, which should be under the control of the educational authorities. Children from the Special Classes should be advanced to the institution at the proper age.

Atlantic City, Bayonne, Camden, Elizabeth, Hoboken, Jersey City, Newark, Passaic, Paterson and Trenton. (Also possibly East Orange, Orange, Perty Amboy and West Hoboken.)

Here the expense must be borne by the municipality—the parents contributing what they are able and the State assisting as it does in the county care of the insane. The number to care for at this age will have decreased, for the death rate is not negligible.

The Training School for children at Vineland will be able to care for the children of this group (12-20 years) from the smaller communities, under this general plan.

3. Those who are 21 years old and over (and the number will have

still further decreased) can be cared for by the State at its custodial institutions at Vineland (women) and Skillman (men), and the transfers should be made directly from the institutions for children to the State's institutions for adults. The expense here will be borne by the State—the parents contributing what they are able as they now do.

4. All idiotic cases—those whose personal habits are unclean and who need special care should be cared for in the above institutions, or better still in the almshouses.

Suggest a better plan before you turn this one down.

We must realize that it is folly to expect to place this whole burden upon the State. In twenty-five years the State (and private charity) has provided accommodations for about 1,000 of its feeble-minded and epileptics.

It took years of urging, publicity and agitation to get the Epileptic Village (1898), the Tuberculosis Sanitarium (1902) and the Women's Reformatory (1912), the only institutions established by the State during this time. This is altogether too slow. We need the co-operation of every reader and everyone who can be interested, if the problem is to be solved.

Send suggestions and advice. They will be gratefully received.

In a later issue, the plans will be discussed at greater length.

Notes on the “Mongolian Type” of Mental Defective

The so-called mongolian type of defective is unique and has a very marked characteristic. To begin with he is almost without exception the only defective child in the family and has no defective ancestry. It seems to be a sporadic case of arrested development due to a pre-natal influence. In 53 per cent. of the cases the mongolian child is the last born. This would indicate that the creative power had waned and the mother was not able to bring the child to full maturity. They are children that are born at full term but there has been an arrest of development in uterine life. This possibly may be rather early. When the children are not the last born it is generally possible to trace the cause to some shock, or some worry or physical trouble of a temporary character. When this trouble is later overcome there may be normal children born.

The mongolian type comes almost invariably from the best of families. Without exception our heredity charts of the children here show a perfectly clean and normal family tree.

Because of this early arrest of development, the brain does not grow to its full proportions and as a result the possible mental growth of the

child is limited. In the majority of cases they never attain to a greater development than that of a four-year-old child. If rightly handled they can be trained to do errands and small work that is of considerable interest to them. They can be made happy if associated with children like themselves, but older normal children, as a rule annoy them very much.

Our statistics are based on a study of 294 cases.

From these facts it appears that if the mongolian type is born after a considerable number of children it is very uncertain and unlikely that there will be any more children born in that family. If a mongolian child is born first or second in the family and the cause can be traced and it is known that it has been removed then it is possible that later children will be born and will be normal,

Progress of our Bio-Chemical Work

A. W. Peters

Since the preceding report additional gas and steam pipes have been placed in the laboratory. The amount of steam piping necessary for both heat and experimental purposes is not yet complete. Additional water supply is also included in the plans for plumbing. Except as these operations of construction interfere, the laboratory is in fair condition for chemical work. Its efficiency is increasing by the arrival of more of the apparatus previously ordered.

A refractometer came recently and I have spent some time in setting up and adjusting it ready for use. By means of this instrument we shall be able to get data regarding the amount of protein in blood, the nature and concentration of phosphorus-containing brain substances, and possibly also data pertaining to the composition of urine.

In Bulletin No. 3 I referred to some unsuccessful experiments made to find a cheaper method of measuring copper for the analysis of sugar in urine. The potassium iodide used is very expensive (\$3.00 or more per pound for the purity required) and we shall have to make numerous analyses of this kind. The difficulty has now been solved by the publication in one of our journals of a new and cheaper, but still accurate method for copper analysis. I have tested the method and found it desirable.

The chemical aspect of my work has now developed so far that I see more profitable work offered by the favorable conditions which exist here than I am personally able to do. Perhaps the following description will convey an idea of the present status of our work, with especial reference to the children of the institution.

We have found upon trial that we can collect specimens of urine as

desired from certain types of children without other difficulty than that of inconvenience to the child's attendant. I am under much obligation to all the attendants with whom I have come in contact for their hearty co-operation. They have also given me valuable information regarding the physiological characteristics of these children. The contribution which the attendants will thus make towards the scientific investigation of the children is by no means small. With regard to other classes of children, we shall have to experiment on methods of dealing with them when the necessity arrives. At present there is more material available than I am able to study exhaustively.

After the collection of a number of specimens of urine, and after a limited examination of them, the following results appeared:

First, practically none of these urines are normal, and

Second, unexpected pathological conditions become evident which would not have been otherwise detected. Not only are these observations valuable from the standpoint of a scientific pathological analysis of the cases, but they also plainly indicate the advisability of supervision and study of the individual nutrition of many children. Those whom I have especially observed are abnormal in their use of drink and food. They at once suggest to the student of metabolism important questions in both the physiology and pathology of the internal organs. Without doubt, these conditions write their record in the nature, composition, and changes of the blood and the urine, and await our study by the variety of methods for which we have planned. While I am now speaking in general terms, the evidence for the above point of view is on hand in the laboratory. The chief aim at present is to orient myself as to what features of these urines are best adapted to give the desired information regarding the physiological and pathological condition of the children, for time and resources do not permit us to make all the examinations that suggest themselves.

The urines above referred to are mostly those of Mongolian subjects. In my previous report I raised the question of creatinine metabolism. I have some data on the creatine and creatinine contents of urines, but they are not yet numerous, nor have I studied them analytically. A carefully kept and indexed record of all data with reference to any child, or to any chemical examination is kept. As these accumulate we hope that the children at Vineland will become, with reference to their physiology and pathology, the most fully surveyed group of individuals anywhere available for scientific study, and, as a consequence, the best and most scientifically cared-for group. The latter consideration will doubtless be a source of much comfort to many patrons of the institution.

The biochemical laboratory is now prepared to make, upon request, very simple examinations and reports on the physiological and pathological

conditions of individual children, exclusive of such conditions as are determined by psychological, psychiatric, neurological or physical methods of examination. In time we may be able to make these examinations more intensive and significant. At present their extent and number are necessarily limited, in view of research work that should not be seriously interrupted.

• Editorial Note

A double number. Circumstances delayed the November until too late to mail under the postal regulations. We were thus compelled to issue a November-December number at this time. However, rather than issue so large a paper, we have held some of the matter until the January paper. The full number of pages will then be made up.

The Training School wishes its readers a Merry Christmas and a Happy New Year.

The Story of Billikens

Henry H. Goddard

Billikens was 5, the child of drunken and utterly irresponsible parents. The social workers of her community had struggled with the problem until they had become convinced that the parents were unreformable and that the children, Billikens and her older sister who was 8, could not get anything good at home and must be provided for elsewhere. Billikens attracted their attention by her size which was below that of any child of her age and also by her mental peculiarities which led them to take her to a specialist who pronounced her an imbecile. Upon this, application was made for her admission at Vineland which was in due time effected.

One bright day in February, 1909, she appeared at the Training School. Altho 5 years old the previous September, she looked more like 3 both in stature and general appearance. Her head was very small, her face pinched, the mouth very large. She could not dress or undress herself, apparently did not talk, could not recognize color or form, attention flighty and only to those things that appealed to her instinctive interests. Imitation was high. She was very nervous, affectionate, fond of play, fond of dogs and of children and very active.

She at once attracted the interest and attention of her caretakers and soon earned the name "Billikens," having indeed a more or less noticeable resemblance to those classic features. She at once became "the problem" of the Training School. It was learned that she had been early fed upon whiskey.

It was thought that perhaps her stunted physical condition, as well as her mental dullness might be more or less completely attributed to that cause and that possibly it was not too late to remove that treatment and giving a more hygienic one, restore her to a normal condition. In consequence of this, her case was studied with great care and is of special interest at the present time. Her first examination showed her below any child of normal age, both in standing, and sitting height, in weight, in grip of the right hand and in lung capacity. She ranked as low imbecile by the Binet Scale then in use. She knew a cup, key and string, but could not point out anything in a picture of familiar objects; could not match colors.

The case is further interesting from the standpoint of causation. On account of the alcoholism of the parents it is somewhat difficult to determine accurately their mentality, but it seems almost certain that the mother is a normal woman, and that she has two normal sisters at least. The mother's parents both died in Ireland. The father is also probably normal. He is a flagman on the railroad and with the exception of his drunken sprees, seems to be satisfactory. His parents also lived and died in Ireland. It is not a question of alcoholism in the parents causing the feeble-mindedness of the children, since the children themselves had been fed on alcohol from infancy and had been known to be thoroly intoxicated a great deal of the time. That they are at present mentally defective, there is no question of doubt. It remains to be seen whether the effect produced by their being fed on whiskey from infancy up, can now be removed by any method whatever. The alcohol being stopped, will nature assert itself and they recover, or will any method of treatment or medication help overcome the condition. The progress of the child since entering the Training School is indicated by the following records:

A little more than a year after admission, she tested by the Binet Scale, three and two points. Specifically in reference to this, she had developed so that she could point to her nose, eyes and mouth. She could repeat a simple phrase like "it rains. I am hungry." She, looking at a picture, could now enumerate "the little boy," "lady," "little girls," etc. She knew her name. She did not know whether she was a boy or a girl, but recognized a "key" and "penny" and once repeated three figures. She could not tell which was the longer of two lines. She did not know the heavier of three and twelve grams or six and fifteen grams. She could not count four pennies; could not do the game of "patience." She knew her right hand but not her left ear and could tell that she was 6 years old. Her talking had come quite rapidly. Six months after admission it is recorded that she talked and had learned to sing several choruses from songs sung at Assembly. In kindergarten, had learned to string beads, put in pegs and could recognize red and could follow in line pretty well, and take part in the games. Was said to observe quickly and tried to do

everything the others did. A few months later, May 24, 1910, it is recorded, "Has improved in every way. Takes part in all kindergarten work; can sew a card with little help, can thread a needle and colors well for a beginner. Joins in the games. Is the most active child in the class. If punished will stamp her foot or clap her hands. When others are punished, will shake her finger at them and tell them they are naughty as if she had the disciplining of them. Her habits are good."

She had been kept in the hospital up to this time where she had received special treatment, calculated to build her up and perhaps overcome the effects of the alcohol. She had sore eyes and a discharging ear. The eyes were treated with mercuric ointment; the ear with antiseptics. Constitutionally she was treated by a physiological therapy for nearly a year and a half. The only medicine she received was a small dose of elixir of iron, quinine and strychnia well diluted. In November, 1910, she was operated upon for enlarged tonsils and adenoids, made an uneventful recovery, but was kept at the hospital for further time and was given constitutional treatment.

Two years after admission, in February, 1911, she still tested 3². She had, however, learned to do a great many things, had formed a good many habits and was supposed by all who came in contact with her, to have improved very greatly. This of course, she could easily do without changing her mental level. In July, she tested three and *three* points. She had taken part in the Christmas play, was a "fire-fly" and did a little dance and in another play took the part of "Blue baby." In April there is recorded a steady improvement along all lines in school. "Speaks very much more distinctly and forms her sentences much better, rarely making grammatical errors in the use of small every day expressions. Commits to memory readily. Has learned to paste paper chains without any help and takes great pride in doing it 'myself.' Knows that calling for help over and over again does no good and that by only sitting up 'like a lady,' will bring the desired help. She is very persistent in mischief and when corrected, will go just as far as possible before obeying. Scolds and delights in the punishment of other children. Follows in line and marches, dances two-steps and waltzes in perfect time. Is affectionate, active, nervous, full of life. Plays alone very nicely."

At the February, 1911, examination, there had been very little improvement in stature, weight, grip or lung capacity. She did the form board in two minutes on a second trial. In August, 1911, we began the administration of the extract of Pineal gland under the direction of Doctors Dana and Berkeley of New York. With a slight intermission about the end of the year, this was continued uninterruptedly for six months. In September, 1911, she was relatively only slightly better in the physical measurements than when she was admitted, but in January, 1912, after having had

the Pineal for about four or five months, she was taller in sitting height and slightly better in lung capacity. Mentally, she had gone from 3³ to 4¹. In March, 1912, soon after the close of the administration of the Pineal extract, she had made surprising improvement in the grip of each hand, being now equal to 30 per cent. of normal children of her age in the right hand and 70 per cent. in the left hand, while her lung capacity had also improved, going up from 300 cubic centimeters to 800. Mentally she now tested 5. She now counts four pennies, does the "patience" game, knows whether it is morning or afternoon and can carry out three commands; (put the key on the chair, shut the door and bring the box) and she also recognizes the four colors, red, blue, green, yellow. She cannot yet copy the square or do anything with definitions. On this occasion also, she fails to show her right hand or left ear. On the whole, her improvement in the six months during which she received Pineal extract is decidedly marked. Her improvement in school work has already been noticed. In August of the present year, about six months since the Pineal treatment was abandoned, she has continued to grow rather strongly in height, both standing and sitting; in weight, not so much; in grip of hands, practically none; and in lung capacity, has fallen back, having 800 cubic centimeters in March and only 550 in August, while her mentality remains practically the same. Her present record of 5, however, is obtained by the failure to do some questions that she did before being offset by her ability to do some others. This is probably explained on the basis of her inability to attend to the question, always marked but affecting at one examination one question, at another, another. On the whole, however, there can be no question that she has improved greatly in her mentality since she received the Pineal extract while in the six months preceding that, she had not improved at all.

Such are the main facts in the history of Billikens since we have known her. We were compelled to stop the administration of Pineal extract for a lack of funds. We hope to be able to take it up again before long and watch results. If this should prove to be really as helpful as the short experiment seemed to indicate, there is no telling what may be accomplished; but if the results are only apparent, then it is perfectly clear that she is really defective mentally and it is apparent that she is really arrested in her development and so much arrested that it will not be overcome and it would seem to be as much of a demonstration as we should expect from a single case of the fact that alcohol administered as in this case will produce a condition which cannot be overcome.

Our biochemist is expecting to attack the problem of her metabolism and after a careful examination of her present condition, if we are able to administer the Pineal extract again, she will then be again studied from the physiological standpoint and something of value may possibly be learned. Her case will be watched and studied with great interest.

Defective Child Exhibit

Carrie M. Sumwalt

The Teachers' Training School, of Baltimore, will exhibit material relating to The Defective Child on the afternoons of June 3, 4, 5, 6 and 7, from 3 to 6 o'clock.

The foregoing invitation was sent to the students of the Training School, and to the teachers and the general public of Baltimore, by Frank A. Manny, director of the Training School, and Carrie M. Sumwalt, teacher in charge of the special problem.

The purpose of the director and his assistant in exhibiting was to show both the progress made by Baltimore in this vital work and to indicate the forward movement that was needed.

To carry out this purpose, a special section of the exhibit was devoted to the Elementary School System of Baltimore, explaining how it aims to prevent and cure the defective child. By way of approach, a chart was displayed showing the division of the schools into grades; the sub-division of each grade into classes for the bright, medium and slow child, and the provision for the exceptionally bright and backward children through preparatory and ungraded classes. Then, especial attention was called to the ungraded classes, of which the defective child now forms a part. This was secured by exhibiting the rulings of the Board of School Commissioners as to the members of these classes, particularly as to their entrance and advancement to the next school grade; the courses of study; the methods of teaching; the defective child in repose and at work (through photographs); the industrial work of defective children, and the reports of the teachers, showing the results and the need.

To further the movement, the attention of visitors was called to the special fields in which the problem of the defective child was being studied. Monographs, pamphlets and photographs were exhibited from the training schools of Rosewood, Vineland and Waverly; from the universities of Johns Hopkins, Pennsylvania and Pittsburgh; from the educational magazines, *The Survey*, *The Psychological Clinic* and the *Journal of Educational Psychology*; and, lastly, from the United States Government.

To still advance the movement, the attention of visitors was directed through concrete material to standard tests for mental efficiency, the Binet and the De Sanctis; the standard method of presenting thought, the Froebelian; the method of teaching that is seeking entrance, the Montessori; the lines of industrial work that are now followed in institutions for the training of defectives; the aim of these institutions in training-preparation for life and not for any academic grade; and, finally, the organization of the best public school system in the United States in its care of the defective child—the school system of Newton, Massachusetts.

The exhibit was well attended, and in response to repeated requests was continued for three weeks.

Conservation of the Nation's Brain Power

Drs. Warren, Paton, Dahlgren, Cotton

"If a training in pedagogics gave teachers a clearer and more practical insight into actual life as well as some appreciation of the beginning pathological tendencies of humanity, many failures would be avoided and many difficulties would be overcome."

—Kraft-Ebing.

THE PROBLEM.

Why should not a well-organized movement be started to conserve the brain-power of the nation? The plan is both feasible and practical.

Our conduct and thoughts depend upon the capacity of our nervous system. The Brain is the individual—by it man lives, moves, and has his being. Education is the process of training the Brain and Nervous System by study and discipline. *The aim of an education should be to develop the capacity of these organs to the utmost.*

Personal achievement measures the efficiency of any individual's brain. National greatness is an index of the citizens' brain-power.

Social reforms have for their object the improvement of human conduct. In order to understand conduct we must have some idea of the mechanism which determines its character. A few years ago physicians were chiefly occupied in the attempt to cure diseases. To-day one of their duties is to educate the public to realize the importance to the individual and the nation of preventive medicine. This remarkable change has been brought about by the study and avoidance of conditions which are the sources of disease.

The advances made during the XIXth Century in the study of the brain and nervous system have been among the greatest achievements of the human race. The application of these discoveries to the study of educational and social problems has only just begun. Already the public is awakening to an appreciation of the fact that men who are ignorant in regard to all questions connected with the structure and function of the brain are not the men best qualified to speak with authority upon the methods for training these organs.

HOW EDUCATION SHOULD HELP.

The formation of good mental habits and not the imparting of information is the essential factor in education. The first duty of the teacher is to form some estimate of the functional capacity of each student's brain, then to encourage each individual to develop his latent faculties after he has been cautioned not to permit any incentive to lead him to expose his

nervous system to a strain in excess of its latent energy.

An eminent historian has told us that no physician in England who was more than fifty years of age at the time of Harvey's discovery of the circulation of the blood accepted the new doctrine. Mr. Bryce, the British Ambassador, has recently directed attention to the enormous good that would have come to the human race if men like Helmholtz, Lord Kelvin, Newton and Pasteur had retained their mental vigor to the age of Methusaleh. A number of the conditions which make it difficult, often impossible, for those who have passed the fifth decade of life to apprehend new truths are now known to physicians. This knowledge makes it possible to suggest certain rules which if followed tend to prolong the period of mental plasticity and vigor.

Millions of dollars are spent annually in forging the guns to preserve international peace! Science has not only pointed out the way for increasing the efficiency of the man behind the guns, but it has suggested ways of preventing the development of the prejudices and passion which lead to wars.

Educational and social reforms in order to be successful should include as an essential factor in their program the encouragement of all rational projects for promoting the study of the brain and nervous system.

HOW PSYCHOLOGY SHOULD HELP.

Psychology is teaching us to measure up the sluggish individual. A noted French psychologist (Binet) has worked out a series of tests to show the mental age of any child or childish adult. Some children 8 years old physically are 7 or 6 years old in mental capacity, while a few show mental capacity beyond their age. The Binet tests enable us to put school children into classes suited to their mental age. The same tests are used with defective children. By means of them idiots and imbeciles are classed into six or more grades, each grade capable of performing certain duties and incapable of others. *We need an endowed Research Laboratory where the Binet tests can be perfected and other tests of the same sort can be worked out.* The Binet tests are only the beginning of a very practical Psychology of Education.

The study of backward school children has shown that backwardness is often due to defective hearing, eyesight, or other remediable causes. Psychology is just grasping the fact that individual differences play an important role in education. Among children whose senses are not defective some learn better through the eye than through the ear. Some adults understand a problem better when it is told them, others grasp it better by studying books. Not only the child but the adult can make better use of his time if he studies in the way best suited to his personality. We should tell one man to read, another to listen. Psychologists are striving to work out tests for these individual differences.

THE STUDY OF HABITS.

The active side of life is quite as important to man as the senses. We learn to typewrite, play tennis, drive nails, etc., by practicing the necessary movements. Psychologists have found that there are regular stages in learning. At first the progress is very rapid, after a while it slows up and appears to stop, and later there is progress again. *We need to study the formation of habit more thoroughly in the laboratory.* It promises valuable aid in the motor training of craftsmen as well as normal and defective children.

Habits of thought need investigation no less than habits of action. Our course of studies in the schools, and the successive steps in any particular study, should all be planned with reference to the way thought works. Some of these principles can be picked up instinctively by a clever teacher, but there are many rules for the formation of mental habits which the psychologist only can discover by patient investigation.

THE NORMAL AND THE ABNORMAL.

Every man's life is influenced not only by his ideals but by his lower cravings. The impulse to drink, to gambling, to sexual irregularities, is so strong in some persons that society must interfere. In others these impulses are weak or so well controlled that the law ignores them. But whether or not they rise to the danger level *it is of the utmost importance to society that we learn how these cravings act* and why they sometimes come to have such force. Only with this knowledge can we hope to find means of controlling them. Kraepelin has shown the effect of drugs and stimulants on normal persons. We must investigate thoroughly the channels through which these agents act and the ways in which they disturb the body and the mind.

The study of insanity depends largely on our knowledge of the normal mental processes. Illusions can only be understood if we know how sane thinking works. The study of "fixed ideas" (paranoia) is guided by the investigation of normal ideas. The normal speech processes throw light on aphasia. Too little is known about the workings of the sane human mind. The mind-doctor is asking many questions which the mind-student cannot answer. Research in normal psychology is a vital factor in the movement for mental hygiene.

WHAT THE UNIVERSITIES SHOULD DO.

The universities must furnish the facts. Several departments working together are needed to discover and publish them. The end in view may be accomplished by:

(1) The establishment in all universities of *departments for the study of the structure and function of the nervous system in the lower animals*, so that the investigator may go from the simpler to the more

complex phenomena of behavior.

(2) *The study of human psychology* on a far broader basis than has yet been attempted. In nearly all American universities the psychological departments are seriously handicapped by being regulated as a sub-department of philosophy. This union is unfortunate. Psychologists ought to study facts without being tied to stereotyped theories and systems of knowledge. Methods should be used akin to those of the other natural sciences.

(3) The establishment of *departments of mental hygiene* where teachers may be taught to teach and students how to study. Advice should also be given, so that the seekers after knowledge may not find, as frequently happens, that its possession is a curse rather than a blessing.

(4) *The greater development of the scientific work in connection with the hospitals*, as is found in the German, Austrian, and Swiss institutions, so that the information obtained may be used not only as a basis for the cure and prevention of alienation, but in the planning for more practical and effective reforms in attacking educational and social problems.

If the universities will organize along these lines and enter zealously upon the work, our national brain-power will be developed to the highest degree of mental efficiency.

The Feeble Minded Immigrant

Henry H. Goddard

In the October number of this Journal we presented some data, meagre indeed, but the best we could obtain, bearing upon the question of how many of the inmates of our institutions for the feeble-minded are themselves foreign born.

The statistics collected from sixteen institutions showed that of 11,292 inmates of those institutions 508 were foreign born—approximately 4½ per cent. Incomplete as the figures are they are a sufficient answer to that rather large group of people who are inclined to think of our problem of the feeble-minded as closely related to that of immigration. We may double, if necessary, the above percentage and still we have nine-tenths of our feeble-minded in institutions American born. Going back to the parents would of course show a different result, but from this there is little argument.

This month we treat of quite a different problem, viz.: What percentage of immigrants are feeble-minded; and can anything be done to prevent the landing of such immigrants?

Nearly two years ago Superintendent Johnstone and the writer were invited to come to Ellis Island to see if we could offer any suggestion as to how the service could be improved in the direction of recognizing and detaining more of the mental defectives. In response to the invitation, a day was spent at the Island. The routine there was observed; the way in which the physicians did their work and the results that they achieved. At the end of the day we both felt ourselves overwhelmed by the size of the problem and the general situation. The physicians seemed to be doing wonderful work in the recognition of physical defect and insanity. The number of immigrants passing thru was so vast; the methods then known of detecting mental deficiency were so slow and cumbersome that it seemed hopeless to make any improvement in the method and while we felt sure that from a statistical standpoint, there must be many defectives who were passing thru, yet we saw no way in which it could be stopped without enormous outlay on the part of the government.

In May of the present year, the writer with two assistants from the Laboratory, Misses Bell and Mateer, made another visit to Ellis Island, merely for the purpose of seeing the place again. To the writer's great surprise, the problem seemed to have materially changed. In the first place, better facilities had been provided for the physicians and their work. The whole situation was no longer so new and overpowering as it appeared on the former visit. In consequence of this changed condition and the newer view, we were led to ask to be allowed to make an experiment. It is needless to say that our request met with a ready response on the part of the authorities on the Island. The request was this, that two of the Vineland Laboratory workers should be allowed to spend the day there, the one standing on the line and selecting such of the persons who came thru as seemed to her mentally defective, her sole method of determining this being by her observation of them as they passed, based on her experience with mental defectives at the Institution at Vineland. The other assistant was to be in a nearby room with the Binet tests and without knowledge of whether the persons sent in were normal or defective, was to apply the test with the aid of an interpreter and see what the result might be. This was done.

In the course of the day, twelve immigrants were selected for testing. Nine of these were picked out because it was thought they were mentally defective. Three were selected as control cases, the opinion of the selector being that they were normal. The result as found by the Binet Scale was as follows:

Of the nine suspects, every one was from at least four to nine years backward. Of the three controls, one was seven years old and tested six; one was nine years old and tested ten; one was adult and went entirely thru all of the Binet tests.

Encouraged by this experience, it was planned to devote an entire week to this experiment. It was not feasible to take it up at that time and consequently it was postponed until September just past.

A somewhat similar procedure was carried out with the following result:

Although the work was not done under the most favorable conditions remarkable results were obtained. There were many interested observers of every test: the interpreters were unused to the tests and many delays were encountered.

Forty-four persons were tested. Thirty-three of these were selected by the regular medical inspectors of the department. Of these thirty-three, *fifteen* proved to be defective while *eighteen* were normal. Eleven cases were selected by the Vineland experts in feeble-mindedness: of these eleven, *only two* were *not* defective and one of these had been taken to compare with a very defective sister rather than because the case itself seemed defective.

It is thus seen that of those selected by the physicians less than half were correctly selected, while of those selected by the experts seven-eighths were rightly chosen.

On the last day of the experiment the Vineland workers stood in line and simply tallied every defective that passed, without calling them out of line. The physicians, however, called out such as they thought defective. The results were, of something more than 1,260 who passed in line, Misses Bell and Mateer recorded 83 as defective; the physicians selected 18. If the above ratio of correct selections holds, then there were about 72 defectives in that line of whom the physicians recognized about 8—approximately 10 per cent.

It is hardly necessary to say that this is no disparagement of the physicians. They do not pretend to be experts on feeble-mindedness. The comparison simply shows what experts can do.

On this basis then, experts would detect at least ten times as many mental defectives as are now recognized by physicians who are experts in other lines but not in feeble-mindedness.

Our second point comes out of the foregoing argument and a further fact about the group of 1,260 who passed in line on the last day of the experiment.

This 1,260 was made up of three groups: one of 600 from southern Europe. Of these 46 or 7.5 per cent. were recognized as defective. The second was 260, also from southern Europe of whom 24 were checked as defective—9 per cent. The third group was 400 from northern Europe. Thirteen were defective or $3\frac{1}{4}$ per cent. This is an enormous proportion in comparison with our estimate in the United States of *three* or *four* defectives in a *thousand* of the population. But the Royal Commission found

nearly twice as many defectives in Ireland as in Scotland.

We have found that 2 per cent. of the school population is feeble-minded. These immigrants, however, were not confined to persons of school age. Those actually tested range in age from 7 to 37 years, the most of any one age being found at 17 and 18 as will be seen from the following tabulation. The second part gives the distribution by mental age.

TABLE I

Chronological Age	7	8	9	11	15	16	17	18	19	20	21	23	24	25	28	30	31	36	37
Number Tested	1	1	1	1	1	3	6	7	4	2	2	4	2	3	1	1	2	1	1

TABLE II

Mental Age	3	4	5	6	7	8	9	10	Normal
Number Tested	2	1	2	8	5	4	1	1	20

Such was the experiment and such the results. In view of all this, it seems possible to point out at least one solution of the problem of detecting the feeble-minded immigrant.

I am now entirely convinced and satisfied that persons trained for a year or two in institutions for the feeble-minded where they have had opportunity to see and study these people as these two assistants have had, can go to Ellis Island or any Immigrant Station and standing by the line as the immigrants pass, pick out with marvelous accuracy every case of mental defect in all those who are above the infant age. This will seem to many readers an extravagant statement, and yet upon second thought, I think it must be admitted that this is really not more than is done by the physicians who stand there and at a glance, pick out the various physical defects and even insanity. It is only that this is in a different line and a line that is less understood. But I believe that these ladies have absolutely demonstrated their ability to do that thing. But we would no more need to rely upon the mere observation of the person who stands on line than the physicians rely on that method in their cases. These suspected persons are detained and held for a more elaborate examination which may take place the same or on the following day. This in the case of mental defectives would be the Binet tests or some similar system, the essential thing in the plan being that by having this trained expert to pick out all of the suspected cases and only those, the great mass of the immigrants would pass on and there would be left a comparatively small number to be tested by whatever method may be devised. This could easily be handled by the department if there were sufficient appropriation to provide for the workers.

One other point was practically settled. The objection and fear had arisen that it would not be possible to give the Binet test by the aid of an

interpreter, since in so many cases the value of the tests stands upon the question being given exactly right. There is no doubt that there is a great difference in interpreters, indeed, we found it in this experiment, and there is no doubt that a carefully trained psychologist who was conversant with the principal languages would be the ideal person to make this examination. Nevertheless, even with the non-psychological interpreters whom we used, the results were remarkably satisfactory.

If Congress would appropriate the money and would provide for the appointment of say a half a dozen suitable persons to spend the next year or two in some of the institutions for the feeble-minded, studying the problem as there observed, especially under good direction, they would, at the end of that time, have a half dozen experts that they could send to Ellis Island with the practical certainty that they would reduce the number of mental defectives entering thru that port to a minimum. There are many difficulties and many details to be worked out, but the difficulties are not insurmountable and the details can easily be arranged when once the problem is seriously attacked.

The first requisite is adequate financial provision for this extension of the work of the immigrant stations. When the people demand that this shall be done, and Congress acts upon this proposition, then we shall begin to reduce the supply of mental defectives from this source. That it must be reduced is clear from the appalling percentage of defectives among the immigrants— $3\frac{1}{4}$ per cent. of northern and $7\frac{1}{2}$ to 9 in southern Europe. These figures are probably only rough approximations—because of the small number studied—but halve or quarter this per cent. and we still have an alarming condition.

We cannot act too promptly. The immigration officers are ready to act as soon as an appropriation is made.

The world's grown-up children have lost a good friend in Dr. J. W. Fishbourne, of Melbourne, Australia, who, in that land, far-off, and yet near, spent a large part of his life in presenting to the medical profession, to educators, and the community the rights and the needs of the defective.

His work for children, which ended in his opening a school for such backward little ones, conducted for fifteen years with the assistance of his daughters, grew naturally out of his experience as the head of a hospital for the insane and his subsequent practice as a consultant in mental and nervous diseases. But it did not stop there, for he was always addressing meetings, writing to the papers, and reaching the official world in his efforts to help the helpless, and at the same time safe-guard the community. He was one of the founders of the Talbot Epileptic Colony and his last public appearance, within a week of his death, was at one of its meetings.

The Hygiene of the Backward Child

Henry H. Goddard

We count it as one of the signs of civilization that in these days we care for our aged and infirm, our cripples, persons of unsound mind and of defective mind. It is equally a sign of civilization that our school system is coming to take up the question of hygiene and look after the physical comfort and welfare of the children who make up the system. Furthermore it is an extremely encouraging sign of progress that we are already beginning to recognize that the backward child in our schools is a problem by itself.

Much work, however, remains to be done. There is many a medical inspector still who does not realize that there is a problem of the backward child, or realizing it, does not understand how to attack it. To too many such persons, the child is still an adult of smaller stature and the backward child is a child of evil propensities, laziness or maliciousness. Just as in these days the medical inspector who looks for nothing but contagious disease or pediculosis, is a back number and not doing but a fraction of what he should do, so even that medical inspector who goes farther and looks for defective eyesight, defective hearing, adenoids, bad throat conditions and all the other things which the up-to-date medical inspector does look for will still find that he has much to do as soon as he recognizes the problem of the backward child. He will find indeed, as many believe that some of the children who are backward, will immediately pick up and become equal to their fellows as their defective sight is repaired, or their hearing restored, or their adenoids removed, but he will also find that there are many who do not become normal even after all these physical conditions are rendered as complete as possible. Here it is that he must bring to bear his knowledge of the defective child and recognize that he may be dealing with mental deficiency and that he should know how to prescribe treatment for this condition as well as for any other, not with the view of curing it but with the view to seeing that the child received the kind of treatment that is adapted to his condition.

Two per cent. of school children at least, and more in the lower grades are so defective that they can never equal their normal fellows. This means that the medical inspector must expect to find on the average one child in every room he visits who is so far behind in mental development that he needs special recognition, special care and treatment. Sometimes

this will be an obvious case that a slight knowledge on the part of the physician will enable him to recognize. In other cases, it will be a child much nearer the border line and much more difficult to diagnose and recognize. In those cases, the physician should have some ready means of assisting his ordinary observation and examination. As a rule, the medical inspector has very little time to devote to these problems. He hastily makes the examination and concentrates his attention on those that seem to need his services most. To utilize to best advantage the limited time of the inspector, it would be well if the school system itself employed special persons to make these examinations of mentality, so that the medical inspector could concentrate his time upon those cases that were reported to him as not being able to do their work in a normal manner. If all the children were graded (as they can be) as "average," "one year below average," "two years below," "three years below" and so on to the very lowest, then the medical inspector could examine those children specially. In such case, he should begin with those who are two years backward because he is most likely to find in this and the three year backward group, a larger number of those who have physical defects, the removal of which may allow the child to pick up and become normal.

Those who are only one year behind may be due to defect or it may be merely accidental and they would take care of themselves, while those who are four and five years behind are in most cases, not backward because of physical defect, but because of inherent feeble-mindedness. Therefore there is little that the physician can do for them. He may look them over last after his duties to those cases who are more likely to be helped by him have been done.

But they must be turned over ultimately to the psychologist or expert in feeble-mindedness. The defective child is beyond the help of the medical inspector and it would be understood from what has been said that the medical inspector should be highly trained in this particular, having much more experience and knowledge than such inspectors as a rule now have. Besides this, the hygiene of the backward child includes not only the subject usually discussed under school hygiene but the question of the kind of work that is given them to do, not simply because of defective sight or hearing, but because we are now dealing with defective minds and defective minds must be fed not upon the abstractions that are involved in the ordinary school studies but upon concrete teaching; in other words, his whole method of training will differ from that of the normal child.

Our old method of punishing the almost blind child for not being able to read, or condemning the deaf child because he has not heard the explanation given, was no more cruel nor barbarous than our present method of requiring the mentally defective child to do much of the school work that we give him, even tho he does not have the brain that enables

him to master that work.

The hygiene of the backward child then includes the recognition of his condition and the treating him in accordance with his mental capacity.

In short our medical inspectors, our teachers, principals, superintendents and school boards must recognize the problem of the backward child, must recognize that in a large percentage of the cases, the backward child is a feeble-minded child and must have a special treatment of his own.

When this knowledge is obtained on the part of all of these persons, we shall all recognize that the key note of the matter is *happiness*. "Happiness first—all else follows."

The New Extension Department

E. R. Johnstone

(From Superintendent's quarterly report, November, 1912.)

As is evident from all that has been said and done by our School in the past years, we are not satisfied to merely conduct our business properly, care for and treat 400 defectives, train them efficiently, and study them in every detail. No matter how thoroughly this is done, it is but a step. Even to tabulate and record our findings is but another step. And to let our activities be limited by the acreage of the Training School means to sink into inertia and dry rot. No matter how important our knowledge, the number of our facts, the accuracy of our findings; they are practically useless unless we give to the world fully and freely without patent or copyright the information it needs. And so we should now push our Extension Department until it is accomplishing the greatest possible good.

We have not been neglectful in the past. The Training School magazine and various letters and reprints have spread our news. Through the Committee on Provision much has been done, and the hundreds of visitors have carried away help and inspiration. Now we are ready for greater things.

I wish you could know how strongly this phase of the work appeals. Our thoughtful people are awakening to the necessity of gathering the facts and *then telling people what to do*.

New Jersey stands ahead in the appreciation of the problem of the mentally defective, and is taking most advanced steps. Our first efforts shall be to make it a model.

Let me pause here to say that there are many splendid bodies work-

ing at various sides of our problem. It is not our intention to duplicate work by attempting anything that any of them can or will do. We want to assist, to correlate, to draw closer together all of these associations that find the mental defective interfering with the successful handling of their problems.

Ninety per cent. of epileptics are feeble-minded, 40 to 50 per cent. of criminals, and no one knows what percentage of the insane, inebriates, tubercular, neurotics, paralytics, congenitally deaf and blind, sex offenders, prostitutes, syphilitics, tramps and paupers are really in their present condition because they are feeble-minded. The feeble-minded are the innocents, sinned against—not sinning. Yet we condemn and punish in our ignorance. Like the spokes of a great wheel, the hub of which is feeble-mindedness, these conditions radiate, having their center in innocence and misfortune, but carrying disgrace, disease and death wherever they touch the normal line.

This new department finds many duties awaiting it.

1. The publication and management of the Training School magazine, which has been a great drain on the laboratory. We want it to be more virile and the main vehicle of information relating to our subject. Its circulation can be greatly increased, and students who are finding results will gladly avail themselves of this opportunity to get their facts before the public.

2. There should be a systematic plan of sending weekly and monthly letters to the best newspapers and magazines in the country.

3. Regular correspondence should be carried on with Summer school graduates, professional men, institutions, charity organization societies, and child-helping agencies.

4. Definite facts briefly stated should be sent at intervals to our Association members, contributors and those whom we may hope to interest with the end in view that contributions to our work shall be given gladly and as a privilege, as has been the case with most of our large gifts, and not begged from unwilling hands.

5. Members of the legislative bodies and those who are interested in the care of a child must be kept in touch with each other, and in other States workers must be told how to do this.

6. Every effort must be used to aid in getting a census of the feeble-minded. An adequate knowledge of the magnitude of the problem, years ago, would have saved much waste effort.

7. What shall be done with the large numbers now found? is becoming an insistent question. Our suggested plan for comprehensive care must be tested, checked, elaborated and placed before those who ask. Special Classes must be established for all children below adolescence, municipal (or county) training institutions must be built for those be-

tween 12 and 20 years of age. (It will be as easy to get a dozen different cities as to get one in the State.) The State must enlarge its facilities for caring for its men and women. The idiots must be provided for in almshouses or other institutions. This plan is started—other States want to know how it is working.

8. The economical side of the Special Classes must be presented. The advantages of training in intermediate institutions must be shown. The great saving by putting the adults at work for which they have been properly trained and which shall not be too technical for them to understand and do well must be made evident.

9. Work in co-operation with the Commission on Immigration for the exclusion of mental defectives.

In all of this plan we are already assured the co-operation of the Committee on Provision, the departments of Charity and Education, the State Charities Aid and other associations in our own State, and many societies and people in other States.

The head of this department, by speaking, writing and answering these larger questions will greatly relieve our business department, the laboratory, Dr. Goddard and the Superintendent.

A Gifted Parrot

(Lest we teachers forget)

It is not at all unusual for the common green parrakeet of India to be trained to perform tricks by the natives, but a specimen described in the Strand magazine shows quite unheard of proficiency. Besides the tricks of twirling a stick burning at both ends, shooting an arrow from a bow, and threading beads with a shortened needle, it rings the bell for temple service, draws up a bucket for holy water, and places offerings of money on the altar of a miniature shrine. It will also pick out the ace from a number of other cards, but this is done by the bird watching for signals from its master's finger when it gets the right card, the other tricks being carried out on order without further instructions. Its owner puts it through its performances once a week to keep them fresh in its memory, rewarding it with tidbits. Undoubtedly this parrot is entitled to be called a genius, and, as so often happens with geniuses, its mental development is one-sided. Although a three-year-old bird at least, and very fond of its master, it has never learned to say a single word; yet these parrakeets are often very good talkers.

Reviews of Bio-Chemical Literature

A. W. Peters

With this number of the Training School we submit to our readers the first of these articles which are to deal with observations on biochemical matters that may be of interest from the viewpoint of the psychopathologist. The articles are not intended to be exhaustive of their subject nor do the reviews aim at completeness. We shall aim to put before our readers in a cursory way some of the developments in the fields of biochemistry, physiology and pathology that seem to have a bearing on the physiological side of the problem of psychopathology as distinguished from its psychological aspect. In short in these columns we wish to emphasize whatever of fact, of method of investigation, or of suggestion the study of brain and body offers toward the pathological analysis of cases of abnormal mental action or of abnormal development. It seems to us that a detailed pathological analysis must at present be the primary aim of scientific investigation of such cases and that the two prominent lines of effort in this analysis are the psychological and the physiological, taken in their widest sense.

The following paper of Pende* which we have selected for the present review is an illustration of the use of different kinds of data for the elucidation of practically occurring cases. It is entitled: Clinical Conceptions and Pathogenesis of Infantilism. A critical, experimental and clinical contribution. From the Institute of Special Pathology of the Royal University of Palermo. *Deutsches Archiv für klinische Medizin*, 105: 179-234. 1912.

From his conclusions (p. 230) we will first extract Pende's conception of infantilism as we are to-day compelled to formulate it. The principal fact of infantilism is always the small development of the absolute weight of the individual. This applies not only to the body as a whole but also to the distribution of this weight. It is distributed not according to the physiological law of age but according to a chronological law of retardation so great as to interfere with normal functioning of the body. Former definitions which recognized the type Brissaud and the type Lorain and other distinctions disappear under this unitary viewpoint. The Brissaud-Hertoghe theory of the exclusively dysthyroid origin of infantilism is then

*Pende, Nicolo. *Klinischer Begriff und Pathogenese der Infantilismen. Ein kritischer, experimenteller und klinischer Beitrag.* (Aus dem Institute der speziellen Pathologie der königl. Universität von Palermo.) *Deut. Arch. f. klin. Med.* 105: 179-234. 1912.

displaced by the theory of their *pluriglandular* origin. Pende as well as many other investigators regard infantilism as due to a disturbance of the system of the glands of internal secretion. From the standpoint of pathological anatomy the most numerous form of typical infantilism is the *thyro-genito-hypophysial* complex although the greatest frequency of changes occurs in the thyroid. There is known, however, a considerable number of autopsies where the principal lesion is found in the hypophysis. This includes the cases of adiposogenitalis dystrophia.

Pende reviews our information derived from autopsies on cases of varied infantilism. These as well as the facts of ontogenetic physiology and of experimental pathology serve as the basis of his pluriglandular theory. The pathogenesis of infantilism is then developed on the theory of intoxication. One set of glands—the thymus, the pancreas (internal secretion), the parathyroid and possibly the cortical adrenals, and some lymph glands—are concerned with the vegetative functions especially during the growth period of the organism. The other set—thyroid, hypophysis, sexual glands, the medullary adrenals, the pineal—is concerned especially with the development of the animal functions. The first set is especially active in intrauterine life and is predominately anabolic. At puberty the second or catabolic period of life sets in during which the second set of glandular functions predominates. Neither set acts exclusively of the other. An intoxication—syhylic, tubercular, alcoholic—during the intrauterine period may damage the then predominant set of glands so that a poorly developed complex of organs result upon which the second set can operate only defectively. Intoxicating agents may cause hyper- as well as hypo-function and may affect these glands diversely, i. e. selectively. These principles provide a scheme by which the pathogenesis of infantilism can be made rationally intelligible. For autopsies and heredity experiments bearing on this theory of intoxication the original must be consulted (pp. 196-200). To these observations we shall return in future in these Notes.

Following the preceding considerations the paper of Pende contains a detailed description of two cases. This includes the external anatomical appearance, the blood picture, heart and blood pressure, nervous system, psychical investigation, radiographs, anthropometric measurements. The first case was one of somatic infantilism with normal intelligence. It could not be attributed to hypothyroidism and thyroid medication was without result. The data are interpreted by Pende as indicating hypoevolution of the sexual organs. The second case was more complicated in its pathogenesis, exhibiting infantile intelligence and a retarded period of puberty. In this case also the data do not support the hypothesis of exclusive or even predominant hypothyroidism. This case is also one of polyglandular origin with probably hyperplasia of the hypophysis and with

adrenal insufficiency. For the interesting detailed facts presented by these cases the original must be consulted.

In connection with the analysis of these cases Pende calls attention to the importance of the blood examination in its bearing on the question of the glandular functions in all cases of infantilism. It is evident from this as well as from other investigations that the study of blood conditions in cases of abnormal development of mind and body is a very important factor in the pathological analysis.

Needle Work

Eliza A. Randolph

Needlework is one of the most practical lines for mentally defective children.

The beginners are given material for a doll's outfit; after finishing this, they are very glad to make a dress for a "real baby" and small aprons with lace on edge of ruffle. A little later they are anxious to make a dress for themselves, and by this time they are searching the magazines, selecting a model, and asking if they may make a lady's dress.

Deborah Kallikak, after leaving the needlework class and entering the dressmaking room, where she had the actual problems of making dresses for the other girls, hemming sheets and pillow cases, tablecloths and napkins, is now a capable assistant, under supervision of the dressmaker.

The girls in the class often plan a shirtwaist, fancy apron, jabot or doily for their relatives, or for some child in the institution of whom they are fond, or for an employee in the school, as a birthday or Christmas gift.

The knitting given to the younger boys is enjoyed immensely by them in making skating caps, sweaters, slippers, shawls and couch covers.

The boys select their own models from a knitting book or from some article an older boy had knitted a previous year. They have quite a difficult problem before them while they are counting and recounting the number of stitches necessary in starting and measuring the articles in order to get it like their model. When they have accomplished their purpose the smile on their faces is sufficient to assure an observer that they have enjoyed it.

Willie J., a boy over twenty years of age, while mentally he is like a small child, has knitted shawls and afghans with fancy stitches, which he himself selects from designs in books and magazines. After he hears the directions and has the new points explained, he can finish his shawls and afghans as well as a normal person,

The boys have learned to make blouses and have done very neat hand-work. Learning to use the sewing machine was an incentive for them to work in the tailorshop. The older boys piece quilts, embroider sofa pillows and doilies at the cottages.

Needlework gives to the children something that is useful to themselves as well as to others. After they seem to have lost other things they have learned they still cling to needlework.

Current Events

October 1—General Contest Entertainment in the evening. Forty prizes were awarded.

October 8—Itard boys had a treat on their front porch.

October 9—Social Evening for the Employees in Garrison Hall.

October 11—Douglas, one of our little cripple boys had a birthday party. He was 12 years old. He had twelve boy guests at his party, each about 12 years old. The birthday cake was decorated with twelve candles. It was a fine party, as Douglas' face told at every moment during the evening.

October 13—Hazel Cottage boys had a nice party.

October 15—Gilbert D—— celebrated his birthday by going shopping with the matron in the afternoon, and giving a party in the evening. Bridgman boys and a few employees were the especial guests of the evening.

October 16—A birthday party for the October and November boys in the evening.

October 17—Rehearsal of the Harvest Program.

October 19.—Decorated the stage for Harvest Sunday. The vegetables, fruits and grains used upon our farm, formed the chief articles of decoration, and numbered some forty different things.

October 20—Harvest Sunday special service.

October 30—An entertainment for the children given by Professor Pamahaska and his trained dogs, parrots and canaries. This was a most enjoyable evening. The children were delighted with the tricks and antics of these remarkable performers.

This special entertainment was given in place of our usual Hallowe'en celebration, both at our school and at the "Home for Women."

October 31—Miss Hutchinson gave a dinner party for the new boys who have been admitted to our school during the past six months. The Superintendent and a few of the officers were invited guests. Many of the old boys voted that Miss Hutchinson give a party for the "old boys."

November 4—About fifty of our boys, wearing false faces and carrying horns, participated in the Vineland Hallowe'en events.

November 6—The first Teachers' Entertainment of the season given by Misses Capner and Martz, assisted by some forty children, members of their several classes.

As an entertainment it was most enjoyable, and from the standpoint of training, a splendid success.

November 9—Semi-annual Field Day Meet. The children enjoyed their sports and games notwithstanding a cold day.

November 11—Parts assigned for the Christmas Play. Opening of the winter evening classes; seventy-five girls and boys allowed this special privilege.

November 17—Mrs. Hopson, formerly Mrs. Garrison, wife of the founder of the Training School, spoke to the children at our Sunday Assembly.

November 20—The Quarterly Meeting of the Board of Directors and Board of Lady Visitors was held. There was a very good attendance of the members of the two boards, and a most satisfactory meeting throughout.

In the evening the girls participated in a birthday party.

November 21—At the Journal Club papers were read by Miss Peterson—subject, "The Crusade for the Country School," and by Mr. Doll—subject, "The Wise Horses of Elberfield."

Dr. Goddard took charge of the Class in Psychology.

November 24—In the evening the members of the Research Department entertained about 200 boys in the Robison Cottage sitting room. Their program consisted of music, vocal and instrumental, and a chalk talk. The children look forward to these special evenings.

November 25—First rehearsal of the Christmas Play, "Princess Chrysanthemum."

Henry and Charlie gave a party on November the 16th, to 70 guests. Mrs. Garrison told a story about Henry, as she was the first person to see him when he came to the school 24 years ago. It was Charlie's birthday and when he was asked if he did not feel old, he replied: "No indeed; I feel as young as Prof. Johnstone does."

Teddie had a supper party on November 21. His fifteen friends enjoyed the treat most heartily.

On November 23, Miss Annie entertained the boys of Elm and Hazel cottages. The evening was spent playing games and telling original stories.

November 26 was Gordon's birthday. The day was a holiday for Gordon. He ate supper in the family dining room and in the evening had a party at his cottage. Ice cream, candy, cocoa and a birthday cake with fifteen candles made a royal treat for the boys. But best of all Prof. Johnstone told a story while the candles burned. Gordon says he had the best kind of a birthday.

A. H.

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Review—The Montessori System

The Montessori System in Theory and Practice. An Introduction to the Pedagogic Methods of Dr. Maria Montessori. By Dr. Theodote L. Smith. Harper & Bros., New York. 1912.

This little book is a handy introduction to the Montessori system. It is a simple and sane statement of what it is, its pedagogical and psychological basis and comments on its practical application to American conditions. The author is a trained psychologist, has visited the Montessori School and gives us here her carefully thought-out judgment of the whole procedure. The book is a valuable contribution to our thought on this subject and should be read by everyone who is at all interested in the Montessori method, either as an advocate or an adverse critic.

The book is illustrated by excellent protogravures showing children performing the various operations.

The Training School

Devoted to the Interests of those whose minds have not developed normally

Edited by

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Humanity

A man found in a desert a thirsty dog, which from want of drink was at its last gasp.

The worthy man made a bucket of his cap, and twisted his muslin sash into a rope;

Then he girded his waist and extended his arms for service, and gave to the feeble dog a sup of water.

The Prophet revealed of his future condition, that the Supreme Judge had for this act pardoned his sins.

Oh, if thou hast been a hard man, bethink thee, learn to be kind, and make beneficence thy business!

If a kindness done to a dog is not lost, how should that be which is done to a worthy man?

Do good as you find it offered to your hand; the Master of the Universe hath closed against no one the door for doing some good.

To give from your treasury a talent of gold is of less worth than a carat bestowed by the hand of labor.

Each one shall bear the burthen proportioned to his strength: the foot of a locust would be heavy for an ant.

Sa'di of Shiraz. (1184-1291?)

Medical Research at The Training School

William J. Hickson, M. D.

The following article will attempt to briefly survey the opportunities for research and the possibilities it offers for making contributions to the ever-increasingly important topic of *Feeble-Mindedness* and *Mental Defectiveness*, as they present themselves to the writer upon his assumption of the responsibilities of the medical division in the *Research Department* of the *Training School* at Vineland, N. J.

The subjects allotted to this division are very numerous and manifold, but for purposes of discussion may be conveniently separated into three main groups, with their respective subheads into which they naturally fall, remembering, however, that such a scheme does not attempt to be complete.

I. GENERAL EXAMINATION.—A. Physical. (a) Respiratory and circulatory systems, including blood-pressure; (b) Physical inspection, such as is carried out in the public schools of our more advanced communities; (c) Urinalysis, microscopical and chemical; (d) Blood examinations, such as enumeration of red and white cells, differential studies of the latter and hemoglobin estimation; (e) Ophthalmoscopic examination of the eyes, with special reference to the eye ground changes; (f) Vitality and nutrition.

B. Orthopædic. (a) Pes planus; (b) Tendon transplantation, etc.

C. Neurological. (a) Careful recording of all functional and organic symptoms.

D. Psychiatric.

E. Anthropological.

F. Serological. (a) von Pirquet, Wassermann, Nonne, etc.

G. Radiographic.

II. PATHOLOGICAL.—A. Autopsies. (a) Weight and size of all organs; (b) Special attention to ductless glands.

B. Bacteriological.

C. Histo-pathological.

III. EXPERIMENTAL THERAPEUTICS.—A. Dietetics. (a) Microscopical and chemical examination of the excreta.

B. Drugs.

C. Ductless gland therapy.

D. Physiotherapy; electrical, massage and passive movements for contractures.

E. Speech defects.

The general examination will be carried on routinely upon the admission

of every child, and from time to time thereafter as may seem necessary, and also on cases sent to us for observation and diagnosis. It is the basis from which we will work up and through which we will get acquainted with our subject. It is here that we will not only get a measure of our case, such as his general appearance, state of nutrition, vitality, functioning of his organs, stigmata, nervous and mental constitution, anatomical peculiarities, etc., but will also take account of the remedial and irremedial defects present, and in the former case bring them to the attention of the proper authorities for correction.

Among a few of such defects that occur most frequently may be mentioned speech, anæmia, defective vision and hearing, adenoids, hypertropied tonsils, tubercular conditions, pes planus, catarrh, defective teeth, etc. The correction of these defects tends to bring the efficiency and fitness of the case up to its best standard and therefore is of the greatest importance, especially with our cases which are already so badly handicapped by their mental condition. Even among children who are really normal, but who have been somewhat backward, physically or mentally, the correction of some of the defects above mentioned has sometimes brought about remarkable improvement. Instruments of precision will be used in our examinations whenever possible, and we feel that such an accumulation of data as these examinations offer, in both their general and particular aspects, will yield an invaluable fund of information on the subject of mental defectiveness.

It is only necessary to look about an institution such as ours or to examine a few cases at random, neurologically, to appreciate what a vast amount of neuro-pathological material is at hand, particularly for special studies. Our neurological examinations will be conducted with the greatest thoroughness not only with the view of working up the neurological data of the cases, but also for future reference for histo-pathological control. This is a particularly rich field for investigation and should be the means of clearing up many pathological conditions of the nervous system that are now obscure. It is worth mentioning here that in spite of all this, this sort of work among the feeble-minded has received little attention.

We will next discuss the psychiatric side of the situation where similar conditions of neglect prevail. Both of these fields are most important, and offer great possibilities, and when the data is assembled will fill a great gap in our knowledge.

The incidence of insanity among the feeble-minded is, therefore, another chapter that is waiting to be written. It occurs much more frequently than is generally supposed. It makes its appearance oftenest under the form of the group of the hebephrenias of Dementia Præcox, where it is called by the Germans "Propfhebephrenie" (grafted hebephrenia), and its symptoms are masked by the feeble-minded condition existing, and many times its

appearances are regarded as manifestations of feeble mindedness, and so treated, much to the detriment of the subject. There is a great opportunity for systematic work in this field. We are also awaiting with great hopes the results of the histo-pathologic findings in these cases.

We now come to the next topic for discussion under our general examination rubric, namely, anthropology. Here, as in the preceding branches, we find no end of splendid opportunity and almost as much neglected. We will try to utilize much of this material, planning here—as in all other lines—not to duplicate unnecessarily the work being done elsewhere, but to co-operate with all who are pursuing kindred studies.

Serelological tests are now no more looked upon as innovations or experiments; on the contrary, in general examinations such as we shall attempt to carry on here, they will be considered indispensable. We will not only endeavor to gather information on the well-established tests, but will strive to advance our knowledge along these lines in the field of feeble mindedness. The technique will also receive our consideration; in fact, we regard it as an obligation to use all our facilities and advantages to the furtherance of these various fields of work which we shall be engaged in.

Taking up the second main division of our scheme, pathology, we find here as elsewhere, unlimited opportunities for the investigation of pressing problems. It is only within recent years, either here or abroad, that a systematic study of the pathology of the insane has been attempted. It is true that autopsies have been made for years, but mostly in a perfunctory manner and without any serious effort to analyse the results. These conditions are much worse as far as feeble mindedness is concerned, and it will be one of our tasks to try to help fill up this gap.

As the subject of feeble mindedness has attracted more and more attention, and the condition has correspondingly received more consideration from investigators, the feeling has grown that the condition of feeble mindedness is not one exclusively of defect of the nervous system, but that the organism as a whole is involved. With this thought in mind I think even a superficial glance about our institution will afford much substantiating ground for this hypothesis, not only in cases with gross lesions of the nervous system, but also in what might be called assential feeble-mindedness. However, while it may not be true that the nervous system is not the seat exclusively of the pathologic process at work, we are expecting good results from our endeavors in this direction, and shall not be surprised to find also considerable evidences of gross developmental defect in other organs and systems as well as in the central nervous system.

The weight and size of all organs and anomalies of any nature will be carefully recorded.

It is with the histo-pathological study of the central nervous system that we will concern ourselves mostly at present. Strange as it may seem,

here is one of the most promising fields of investigation in this whole subject, almost completely neglected, and while it is true that attempts in this field have been sporadically made, mostly with good results, no systematic work has been done as yet. The whole subject is far from as advanced as it should be. It is in this work again that we will apply the neurological data gained in our general examination, and it should yield some very valuable contributions to the physiology and anatomy of the nervous system.

EXPERIMENTAL THERAPEUTICS.—The subject of dietetics offers many problems for solution. Take for instance epilepsy, which is so prevalent among the feeble-minded. There is the question of the salt-free diet, whether or not it increases the efficiency of the bromides, also the effect of a low-meat or purin-free diet. A microscopical and chemical study of the excretia for the condition of the metabolic processes will be profitable. Many subjects bearing directly on the handling of such cases will be given consideration, such as the best means of controlling incontinence of fæces and urine, *i. e.*, in the case of nocturnal enuresis a dry diet may be tried by withdrawing all liquid for several hours before bedtime, the incontinence of fæces, which is such a trial with many of these cases, might be controlled by a daily clyster, etc., much to the advantage of all concerned, if it succeeds. The foregoing will afford an inkling into some of the practical problems that come up for consideration and are of the greatest importance to all.

The effects of drugs in anæmias, etc., will be tried. The ductless gland therapy will receive special attention from us as promising to contribute therapeutically and physiologically valuable data to our store of knowledge. The effects of certain of the ductless glands administered therapeutically are too well known to need repetition here, as, for example, the thyroid gland in cretinism. The influence again of certain others which seem to have as their function the control of the development of the organism in its earliest stages; others again with the control of various functions and development after the stage of puberty. Such problems will be attacked as the influence on the offspring of defective gland functioning in the mother, *e. g.*, it has been asserted that thyroid hypersection has been found in a great many of the mothers of Mongolian children. Such questions may well receive attention as, where does the defect of the glands lie, for instance, is it a defect of the circulation, the nervous control, structure or situation? This latter theory seems to be very pregnant as in the case of thyroid, which is, as we know, situated superficially and subjected to many traumas and fluctuations of the temperature, or further, the influences of environment, as in the case of endemic cretinism in certain sections where the water supply has been clearly demonstrated to be one of the responsible factors.

Under physico-therapy may be tried out electrical treatment, massage

and passive movements of contracted joints, such as follows the hemiplegias, juvenile cerebral paralysis, etc., and which renders the limbs practically useless. If with the diaschesis theory in mind we can restore a certain degree of usefulness to these disabled limbs, we will consider our efforts very well rewarded.

The best methods and results of treating speech defects, as well as the various forms under which it occurs among our cases, will receive our attention.

Radiography has of late been contributing very materially to our knowledge of the development of the bones, especially in acromegaly, cretinism, etc., as well as assisting in diagnosing many conditions heretofore quite obscure, such as hypo- and hyper-pituitarism, etc.

The foregoing summary of the work that is waiting to be done appears, and indeed is, very far reaching and diversified and of necessity, but a small part can be undertaken at once. However, in actual practice, since much of it, such as the general examination, is of a routine nature, and since many of the problems overlap and are interdependent, we can without endangering the intensive work necessary to the solution of many of them, cover considerable ground. We have to contribute to much of the work excellent admission records of many of the cases.

My remarks thus far may seem to have dwelt unduly on the scientific side of the situation to the neglect of a consideration of the cases themselves, of the humanitarian viewpoint, but to so interpret them would be very erroneous, for are not both of these synonymous? Our work here is charged with the greatest human interest, it strikes right into the family and its ultimate good to humanity in general and the feeble mindedness in particular is one of our greatest inspirations in its fulfilment. It must also not be lost sight of that all our work of a personal nature with the children, be it a psychological, pædagogical, or medical examination, results in the greatest immediate benefit to them physically, mentally and morally.

This intimate association of the children with the teachers and investigators cannot be overestimated in its beneficial effects, as any one can testify who has been associated with the mentally afflicted of any sort in this way. I cannot emphasize this point too strongly. The children themselves like it and it offers a contrast to the children who have no normal companionship and are simply left to themselves from one day to another. Furthermore, many times in our general examinations, owing to their painstaking nature, we are able to unmask many remediable defects, not to mention the more obvious ones, all of which when corrected make for increased efficiency and happiness.

The writer cannot refrain in closing his remarks from referring once more to the advantages offered here for research. Such opportunities carry

with them equally great responsibilities, both of which the writer duly appreciates. There are problems in this field pressing forward which can no longer be neglected, which we cannot afford to ignore, and which cannot fail to yield valuable results, and we hope in due time to have made some contributions to the study of feeble mindedness which will redound to the advantage of these children.

Suggestions for Laboratory Equipment

E. A. Doll

(Assistant Psychologist at The Training School.)

So many letters are coming to the Department of Research for advice concerning laboratory equipment that we think it useful to publish a few suggestions in this regard. Our purpose is not to specify apparatus for a complete laboratory, such as is made possible only by expenditures of considerable money, but rather to state the essentials for a laboratory which wishes to begin in a small way with only limited sums of money at its disposal, laboratories whose purpose it is to perform the standard measurements of experimental psychology and of anthropometry as applied to the problems of mental deficiency.

From our suggestions may be selected those things which are of particular interest. Suggestions for special appliances and apparatus can be found in the text-books and in the commercial catalogs.

Such general apparatus as is essential to almost every laboratory is as follows:

- Iron standards or supports.
- Right-angle clamps.
- Table clamps.
- Iron rods.
- Tables.
- Meter sticks.
- Electric batteries (dry cells).
- Battery connectors (bell wire).
- Time markers (electro-magnetic)
- Circuit keys.
- Telegraph sounders.
- Metronome (Kronecker's).
- Kymograph with appurtenances.
- Stop watch.

Incidentals:

- Cross-section paper.

- Drawing instruments.
- Drawing accessories.
- Millimeter rule.
- Calculating devices.
- Calculating tables.

If it is found desirable to make anthropometric measurements, the following apparatus is essential:

- Stadiometer.
- Anthropometric scales.
- Head calipers.
- Vernier calipers.
- Measuring tape.
- Wet spirometer with sanitary mouthpieces.
- Back and leg dynamometer.
- McCallie audiometer.
- Smedley dynamometer.

Vision tests:

- McCallie eye-test cards.
- Snellen cards.
- Trial lenses.
- Maddox rod.
- Colored worsteds.

For making mental tests, we suggest the following apparatus:

- Stop watch.
- Form board.
- Whipple's Manual and apparatus.
- Healy monograph and material.
- De Sanctis material, consisting chiefly of wooden balls and geometrical forms.

To conduct the Binet tests it is essential to have the following material:

- Record sheets.
- Set of 8 pictures (special).
- Comparison of lines card.
- Set of weighted cubes, ranging from 3, 6, 9, 12, 15 and 18 grams.
- Coins and bills.
- Card triangles.
- Esthetic judgment card.
- Uncompleted pictures card.
- Square card.
- Diamond card.
- Four-colors card.
- Stamps card.
- Design card.

Resistance of suggestion card.

"Binet Measuring Scale."—H. H. Goddard.

For the special printed forms of the Wallin or the Norsworthy tests, we refer our readers to C. H. Stoelting Company's Psychological catalogs, as follows:

Catalog 1-V-11; 11-I-12; 4-V-12; 6-V-12 and 3-V-12.

For convenience, we list six leading manufacturers, three American and three foreign:

Wilh. Petzold, Schonauer Weg No. 6, Leipzig, Germany.

E. Zimmerman, Emilien-strasse 21, Leipzig.

Chas. Verdin, 7, Rue Linne, Paris, France.

C. H. Stoelting Company, 125 North Green Street, Chicago.

Arthur H. Thomas Co., 230 South Seventh Street, Philadelphia.

Central Scientific Co., 14-28 Michigan Street, Chicago.

For general laboratory apparatus, we believe that the American firms manufacture such pieces as will be wanted, but in general it probably will be found that for special apparatus the foreign firms have somewhat lower prices than the American manufacturers, particularly for special apparatus which originated in other countries.

It should also be noted that under certain conditions foreign scientific apparatus can be imported free from duty. We think it will be found that for general apparatus that the Central Scientific Company and the A. H. Thomas Company offer good material, whereas the C. H. Stoelting Company have for sale practically all of the psychological apparatus. The foreign manufacturers should be considered in purchasing special appliances, such as kymographs, stop watches, and the larger instruments of more delicate construction.

We have not mentioned apparatus for special tests nor even for the ordinary investigations of experimental psychology. These must be decided upon by reference to the special purposes of each equipment.

For the benefit of those who desire to make a beginning for a laboratory library, we append a short bibliography of the more desirable books. We have found that these books constitute a working nucleus, and that others can be added from time to time as special requirements demand. Our own practice has been to acquire the standard books first and to add to these the literature of special problems as we take up such problems. Into this list we have not attempted to put any of the many valuable monographs or reprints that are as essential as these books we have listed. It usually happens that the most recent literature of special subjects exist only in monograph or special-article form, but inasmuch as such literature is constantly changing in value, we do not attempt to go so far afield. Furthermore, most of this sort of literature can be found listed in the reference bibliographies in the various books we do list.

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Reviews of Bio-Chemical Literature

Amos W. Peters

On the Function of the Hypophysis

Among the glands of internal secretion the Hypophysis cerebri or pituitary body has become one of great prominence during recent years. Its intimate relation to the brain and to the processes of growth and metabolism has made it a subject of much significance for the problem of feeble mindedness which is associated with abnormal development in the early history of the individual. The work of Bernhard Aschner,¹ "On the function of the hypophysis," which we have chosen for this review, will probably remain as one of the important landmarks in the history of this subject. It comes from the Institute for General and Experimental Pathology of the University of Vienna. It is a brilliant example of the patience,

¹Aschner, Bernhard. "Über die Funktion der Hypophyse." Pflüger's Arch. f. d. ges. Physiologie 146: 1-146, June, 1912.

thoroughness and scientific attitude of our German friends in the field of investigation. Incidentally we note that it contains a disparaging criticism (p. 2) of an American surgeon who has inadvertently fallen into a habit of some medical writers of making comprehensive statements which lack a foundation of observational or experimental evidence on the subject of physiological function. This work of Aschner is itself a model of critical objective logic. An idea of the content of the paper, which we cannot review in detail, may be gained from the following subheads: I. Analysis of previous extirpation experiments on the hypophysis. II. The author's extirpation experiments. III. On the metabolism of animals deprived of the hypophysis. IV. On the function of the Infundibulum and of the Tuber cinereum and their significance in the physiology and the pathology of the hypophysis. V. Application to human pathology.

From the facts of comparative anatomy it is well known that the hypophysis or pituitary gland occurs in even the lowest vertebrates and also thus early begins to show its characteristic division into an anterior glandular portion and a posterior nervous part. In his subdivision I, and further in III, Aschner shows that the supposed results of previous experimental work are largely vitiated by the fact that they were partly due to injury of the adjacent parts of the brain to which the pituitary gland is attached. It was to these incidental injuries that the large mortality of the operated animals was due. With his improved technique, Aschner comes to the conclusion that the removal of the pituitary gland is not fatal, as has been heretofore held. The damage of this procedure to the psychical and growth process of young animals remains, however, well established.

The results of extirpation of the pituitary as described in II differ according to the age of the animal (dog). In adult animals these effects are not marked beyond a moderate adiposity, slight depression of character, somewhat subnormal temperature, decrease of the general power of resistance and some damage to the sexual glands. Marked and characteristic trophic disturbances, however, follow the removal of the pituitary gland from young animals. At the age of four months the operated dogs showed a great excess of fat, were excessively quiet and inactive and in their growth had made only half the development shown by the normal control animals. Infantile characteristics were prominent in the hair and skin, the dentition showed persistence of the milk teeth, the bony system showed lack of fusion and calcification and the continuance of juvenile proportions, the genital organs showed marked microscopical changes. No positive changes were found in the central nervous system exclusive of the operative results. In the other glands of internal secretion the thyroid frequently showed disturbances of structure, the thymus persisted abnormally late, which is well in accord with the general infantile physiological character. Liver and pancreas showed fatty degeneration.

In the experiments on nitrogen excretion described in III, Aschner reaches the conclusion that dogs deprived of the pituitary are analogous to those deprived of the thyroid in that the excretion of nitrogen is diminished by one-third to one-half of the normal amount. In addition to other metabolism experiments, the author here develops the theory of Eppinger, Falta and Rudinger, of the interaction of the glands of internal secretion by adding the hypophysis and the sexual glands to this scheme. Thus for protein and fat metabolism it results that these are stimulated by the thyroid, hypophysis chromaffine system, sexual glands and inhibited by the pancreas and parathyroids. The deposition of calcium is favored by the hypophysis, thyroid, parathyroids and retarded by the sexual glands. In general, pituitary extract, like thymus, increases salt metabolism, and it is suggested that for the treatment of adiposity the less harmful pituitary extract be used instead of the thyroid.

In the application of these results to human pathology, Aschner first emphasizes the distinction between the effects due to the pituitary factor and those due to the adjacent cerebral parts. To the failure to make this distinction, Aschner attributes the overestimation of the function of the pituitary and the lack of clearness in the clinical literature regarding what pathological phenomena are due to hyper or hypofunction, to disturbed function of the gland or finally to alteration in the adjacent cerebral regions. In the application of his results to acromegaly, Aschner considers the brain lesion, which is due to tumor and not so much the pituitary disturbance, to be responsible for the genital anomalies and the glycosuria of this disease. Also in dysplasia adiposogenitalis the cerebral lesions are a more probable cause than the pituitary, and the presence of tumors of great variety in nature and position favors this view by reason of their probable interference with tracts leading to cerebral trophic centers. On the other hand, in adults this disease must at present be explained by Erdheim's theory of intoxication. The condition of true dwarfage and infantilism Aschner regards as due to the lack of pituitary function. Both animal experiment and the results of autopsies which showed high degree of pituitary anomaly uphold this view. Infantilism alone, however, may involve additional factors, as it is only one of the phenomena of disturbances of the function of nutrition. Gigantism, the relation of the pituitary to diseases of other glands of internal secretion, and the pathological relations between the pituitary and the genital organs are also discussed.

The article closes with twenty pages of literature having reference to experimental studies on the hypophysis. The important significance of this paper of Aschner's to all who are engaged in the study or investigation of abnormal development is evident, we hope, even from the above superficial review. A closer study of the original will well repay all who are interested in the scientific aspect of this problem.

Mental Tests at the Mental Hygiene Congress

E. A. Doll

During the second week of November, there was held at the College of the City of New York a Mental Hygiene Congress conducted by the National Committee for Mental Hygiene and the Committee on Mental Hygiene of the New York State Charities Aid Association. The programs of these meetings were very comprehensive, embracing practically all of the sociological phases of insanity. The name "Mental Hygiene Conference," however, was not entirely justified, for since insanity has come to be recognized as only one part of mental hygiene, feeble-mindedness, mental fatigue and mental prophylaxis should have received more attention than was accorded them. Addresses were made by prominent psychiatrists, psychologists, and social workers to audiences so large that nearly every meeting had to be transferred to larger lecture halls.

In connection with the exhibit, the committee had arranged an educational exhibit. This was made up of statistical charts, pictures of institutions, exhibits of the work of patients and exhibits of the restraint apparatus formerly used in hospitals for the insane. At the solicitation of the State Charities Aid Committee, the Training School sent a representative from the Department of Research to take charge of an exhibit of the methods and apparatus of psychological research. C. H. Stoelting Company had loaned a very complete set of laboratory apparatus, such as is used in making mental tests and physical tests, and our representative was sent to explain this apparatus and to demonstrate to the public what can be done and what is being done for mental hygiene by psychological methods. The feature of this exhibit was demonstrational Binet testing, carried out upon children brought to the exhibit by interested parents. It was most encouraging to see how earnestly interested all of the spectators were in the conduct of these tests. This interest made it difficult to do entirely accurate testing because of the noise and comments and distraction, and yet these difficulties were to some extent desirable because they showed how complete was the child's interest in the test, for practically in every case the examiner felt that he had obtained a reliable record, varying only a little from what might have been obtained in the quiet of the laboratory. The children examined were special, rather than representative. They were brought from home or school by parents or friends who wished either to know about the child or who wished to see the tests made. The examinations were made each afternoon from two to five for

about four afternoons of the week. Twenty-four cases were examined and the results yielded seven children normal, four children definitely feeble-minded, seven from one to two years backward, four from one to two years above age, one mongolian idiot unable to speak, and one child, a girl of eight, three and a half years above age. One little French boy was examined without difficulty by interpretation of the questions. One case was a low-grade idiot (a boy of eleven), and two were delinquent girls (one sixteen and one fourteen), both feeble-minded. A few cases were examined in which it was at once apparent that the child had been coached in the tests. These were detected without difficulty and tested with alternative questions or with variations of the usual questions. The Training School was also represented by the pictures and statistical charts that had been exhibited at the Fifteenth International Congress of Hygiene and Demography Exhibit at Washington in September.

The conference and exhibit were very successful and reached the lay as well as the professional man. It was estimated that at least 25,000 attended the meetings and the exhibit. It would be hard to estimate just how much good was done by this information that will be spread from person to person. It is very important that the public be instructed by such conferences. They have a right to know what is being done, and by informing them we cannot but increase the support for the new movements for human betterment.

From the Field

Toledo, Ohio

The members of the various classes of the Vineland Training School, Vineland, N. J., met Thursday evening at the rooms of the Board of Education and organized the Toledo Vineland Alumni Association.

The following officers were elected: President, Mrs. Anna Graether; secretary, Miss Pickett, and treasurer, Miss Swentzel.

Montreal

At the Canadian Conference of Charities, recently held in Montreal, there was, among other exhibits, a dental clinic. In one and one-half hours, from 4.30 to 6 P. M., ninety-two children were examined and the condition of their teeth determined. Three were found healthy; eighty-nine unhealthy. There were found in the mouths of these ninety-two children 298 decayed teeth and 128 missing. This certainly bears out the startling figures we have been hearing about the bad condition of children's teeth with the resulting evils.

New Zealand

New Zealand is very much alive on the eugenics problem. They have

a New Zealand branch of the Eugenics Education Society, of which Miss Macgeorge is Honorable Secretary.

Miss Macgeorge, in a statement regarding her work, says:

"The lecturer is at present handicapped in her work by the want of further data on the laws of heredity as discoverable in the lower forms of life—plants, lower animals. Supply of any such matter (preferably in chart form) would be gratefully received by her. Visits to the institutions for the care and control of mental defectives, of physical defectives and of delinquents have been paid, and eugenic conclusions drawn therefrom.

"At the special school at Otekaieke for the educable mental defectives of New Zealand there are at present 72 boys in residence, and 300 more are 'under consideration.' The two days spent at this institute were a most impressive and instructive time as regards eugenics. To anyone who may still have doubts as to the urgent necessity for the objects of the Eugenic Society I would say, 'Go to Otekaieke.' To watch 72 so cruelly and incurably afflicted boys file in to their dining hall would erase the last doubt from the wavering mind. For effective work for this class it is essential that there should be co-opted with this institution a department of research investigating the cause, results and prevention of mental defect, together with a well-equipped laboratory for the study and examination of the cases supervised, as are established at the training school for 400 backward and feeble-minded children at Vineland, New Jersey."

North Carolina

(Kinston Free Press, December 9.)

The following is a part of the report of Miss Sybil Hyatt, field-worker for the North Carolina School for the Feeble-Minded. The report was made to the trustees of the institution at their annual meeting held in Kinston on the 6th and 7th of the present month. As yet the field-worker, owing to the short period she has been engaged, has been able to cover only a very small portion of the State.

In her report Miss Hyatt says:

"Dr. Hardy was the first superintendent in the South to ask Dr. C. B. Davenport, the secretary of the Eugenics Section of the American Breeders' Association, which is employing me, for a field-worker. Dr. Davenport appreciated Dr. Hardy's earnest desire and the opportunity to open the work in the South, so much, that he made several efforts to get a donation to pay one.

"The Association is largely composed of eminent scientists and breeders, but it is reaching out its arms after every patriot, because of the alarming increase in the number of defective children in proportion to the population.

"The ultimate aim of the school is the elimination of feeble-mindedness from the race by the segregation of the individuals and the education by field-workers of every family that has produced a case.

"Last summer, I heard Dr. H. H. Goddard say at the New York University and Dr. E. L. Thorndike at Columbia University, that every other question before our nation is small beside this. I knew it was so, because they said it, but the full significance of the fact did not bite into my comprehension until I did enough field work to know that few can say with certainty, 'my family is not affected by this trouble.'"

"Many, who have told me where to find feeble-minded children, have said: 'Don't mention my name. I don't want them mad with me.' I have found nobody resentful about my visits. And I have been thanked with deepest gratitude for my interest.

"A gentleman and his wife, both as fine as egg-shell china and infirm with age, have a niece about 35 years old, who is a jabbering epileptic violent-tempered imbecile. He said to me: 'This is what we have faced every day for thirty years. Nobody knows the sorrow but those who have borne it. Such as she is, we love her dearly, and we would never part with her if she were not such a tax on our daughters. The school is one of the greatest blessings that has ever happened to North Carolina.'

"One mother has a 12-year-old slobbering idiot, that has never walked or talked, and three other little children, two of them beautiful. She said: 'The child takes so much of my time that I cannot care for my other children properly. She has grown so heavy, lifting her is injuring me. She gets in violent rages, tears off her clothes and throws things dangerously. The county gives me \$3 a month, but that does not near take care of her. I know it would be a fine thing for her and for my other children for her to go to the school. But I love her more than I love everything else, and I feel like I would lose my mind if I could not see her every day.

"The affection of mothers for feeble-minded children is terrible. They ought to be separated early and forcibly, if necessary. They become bound by a thousand fastenings to this crucifix of anguish, and feel they will die of misery without its support."

Notes

"Saturday, Michael noticed for the first time the bird in our front day-room in the cage. He called out, 'Miss Annie, see the chicken! Oh, see the chicken in the trolley car!'"

More than four-fifths of the elementary school teachers in Prussia are men.

School all the Year Round

A few years ago the idea of school or college all the year round would have been hotly decried; to-day it is an established fact in a number of educational institutions, public and private. It is not merely that the summer session has been widely introduced, but the summer work, from being a purely voluntary and separate affair has come, in some instances, to be an integral part of the year's work, according to reports received at the United States Bureau of Education.

The Harvard Engineering School is a recent instance among higher institutions. The course for the master's degree in engineering at Harvard now takes two years, and there is no summer vacation. The course is divided into first summer, first year, second summer, and second year. The students work from 8 to 10 hours a day, and the total vacations in a year amount to about four weeks, the time being chiefly at Christmas and in the spring. The summer term begins June 22 and closes September 22. A number of other universities follow a somewhat similar plan. The University of Chicago has for some years maintained a summer term having equal weight with the three other quarters of the year.

Even in the elementary school the plan has made some headway, particularly in the large cities. Cleveland, Ohio, formerly had an all-year schedule which included the summer term as one of four quarters, and a modified form of the Cleveland plan is in use in Newark, N. J., where it is being gradually extended from year to year. In the New York City schools, where the problem of sufficient school accommodations is a serious one, the authorities recently had under consideration an all-year plan which will, it is claimed, take care of practically all the children without recourse to half-time. An interesting indication of the attitude of the students themselves toward the all-year plan is afforded by the new Central Commercial and Manual Training High School at Newark. Thirty per cent. of the pupils of this school voted in favor of continuing the school throughout the summer.

It is claimed by the advocates of the all-year plan for public schools in the large cities that the children are healthier and happier in school than on the streets. It is further urged that by taking advantage of an optional summer term children who are compelled to leave school at an early age will be able to advance further in the grades than at present. Backward pupils will also have an opportunity to make up back work, but this has always been more or less a feature of summer sessions.

In the case of the higher institutions, particularly the technical schools, the new movement for all-year work is undoubtedly part of the nationwide demand for scientific efficiency that is making itself felt in every phase of American life. The feeling is that education, especially of an advanced character, is not child's play alone, but serious business, and should approximate the conditions of efficient business.

Nearly two thousand titles of books and articles on children appear in the "Bibliography of Child Study, 1910-11," compiled by the library of Clark University and just issued for free distribution by the United States Bureau of Education. Such topics of current interest as the Boy Scouts, Binet tests, exceptional children, crime among minors, infant mortality, eugenics, open-air schools, medical inspection, sex education, and vocational training are included in the titles listed.

Of 82,224 school children recently examined by medical inspectors in a large city school system, only 28,721 were free from physical defect; the remaining 53,503 were found physically defective in one or more particulars.

English Bill for the Care of the Feeble Minded

When the English Parliament meets again a bill will come up for the third reading, which is intended to prevent people of inferior intellect propagating their kind, by putting them in custodial institutions. Half a century after Darwin's publication of "Origin of Species" setting forth the theory of the "survival of the fittest," the English Parliament was the first to try to put this theory of their famous countryman into practice, and so prevent the increase of an undesirable population. The bill as it is has passed the lower House with a great majority of 242 against 19 votes on second reading.

After this the International Congress for Eugenics met in London and directed public attention to this bill, and since then a strong opposition has set in.

The bill provides that all mental deficients shall be put in custodial institutions; and makes marriage with such person a crime.

The friends of the bill assert that there are about 160,000 persons in the United Kingdom who would be affected by the bill.

One of the opponents of the bill said that it does not need a great stretch of imagination to include some of the women suffragettes as mental deficients. Another speaker said that in case the Liberals should be entrusted with the enforcement of this law they might use it to put their political opponents in such an institution. Otherwise, prominent physicians and alienists make most somber and alarming predictions, and say that for the sake of the preservation of the human race society will be compelled, if conditions do not improve, to enact and enforce more stern laws in the not far distant future.

Dr. Forbes Winslow says: "If conditions do not improve, about 300 years hence there will be about as many insane persons as there are normal; that one out of every 217 is mentally deficient or feeble-minded, not counting the insane."

The law as it is, is so important, and the first ever enacted by any national parliament regarding the confinement of this class of people on a large scale, that the opposition to it is easily understood, and it must be provided with more proper safeguards to prevent any possible abuse of it to appease its opponents and to assure its enactment.

Review

School Organization and the Individual Child. By William H. Holmes, Ph.D. The Davis Press, Worcester, Mass. 1912.

The title page announces that this is "a book for school executives and school teachers, being an exposition of plans that have been evolved to adapt school organization to the needs of individual children, normal, supernormal and subnormal." The dedication further shows the author's spirit: "to those teachers, a small but growing company, who have experienced the joy of teaching boys and girls as individuals." In the preface the author says: "The present volume undertakes the task of presenting, in a somewhat detailed manner, the various plans that have been evolved to make school organization fit the needs of the boys and girls, both normal and abnormal, that are enrolled as pupils in the public schools." Part of the book dealing with plans of classification and adaptation brings together information from many different sources, information that every school executive must have to make his work intelligently efficient. The second part of the book, dealing with the treatment of abnormal children in the public schools, represents the first attempt to bring together information that the general school executive and special class teachers need in order to organize and carry on the work of so-called auxiliary classes or schools for mentally defective children.

This is decidedly a new kind of book and contains much material that will be valuable to students of education. Various so-called methods that have become more or less famous are here described in a brief but clear manner, such as the Manheim method, the Batavia system, the Montessori system, etc.

In the part devoted to the abnormal child there are given the Binet tests, with several other methods of determining backwardness.

An elaborate appendix gives many different kinds of charts, blanks, outlines, and school programs that have been used in various places. There is also a very complete, classified bibliography.

The teacher of backward children will find here a statement of many different plans that have been tried in various places. The material is taken not only from English sources, but from German and French. Typographically the book is well made and attractive.

The Training School

Devoted to the Interests of those whose minds have not developed normally

Edited by

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The De Moor Size-Weight Illusion

For many years the sensory-experiential illusions have had an intrinsic interest for psychologists and have been used at times as measures of suggestibility. At the Training School, an attempt has been made to evaluate the De Moor size-weight illusion as a diagnostic test. In the results obtained, it appears that this attempt has been successful and that this illusion of size and weight really is a test of mental development.

The material consists of two wooden blocks measuring $4.5 \times 11.0 \times 7.5$ cm. and $4.5 \times 11.0 \times 30.5$ cm. of the same wood (poplar) and the same weight. The two blocks are exactly alike in all particulars except that one is four times as long as the other, the weights being made equivalent by loading with lead. These two blocks are placed beside each other on the table and the subject is asked to "Tell me which block seems the heavier." The blocks may be lifted and compared in any manner at all, by successive lifting with one hand, by immediate lifting with both hands, by "hefting," by shaking or in any way that the subject pleases. Only two restrictions are imposed; the blocks must be lifted by direct contact with the hand, and they must be looked at when lifted.

This experiment was carried out in our laboratory on 345 cases of feeble-minded children, ranging in intelligence from low-grade idiocy to high-grade moronia. The testing was carried out in the fall of 1910 by research students of the laboratory. The number of cases at each year are fairly evenly distributed from idiocy up to eight years mentally, and above eight years are somewhat less numerous. The cases divide themselves into three types, (1) those who are unable to do anything in the

experiment, their intelligence being insufficient to enable them to comprehend the instruction; (2) those who can perform the experiment, but who get no illusion—persons to whom both weights seem equal; and (3) those who can do the experiment and who get the illusion—who report that the smaller block is heavier than the larger.

In 345 cases, the following results were obtained. Three cases were discarded, because the illusion was obtained accidentally thru some fault of the experimenter.

Mental age.	Number tested.	Complete failure.	Failed to have illusion.	Had illusion.
1	35	34 97.1%	1 2.9%	0 %
2	37*	28 75.7	3 8.1	4 10.8
3	38†	17 44.8	8 21.6	12 31.6
4	32	5 15.6	14 43.7	13 40.7
5	35	5 14.3	9 25.7	21 60
6	36	2 5.6	12 33.3	22 61.2
7	45	3 6.7	4 8.9	38 84.4
8	41	0 0	0 0	41 100
9	25	0 0	0 0	25 100
10	12	0 0	0 0	12 100
11	4	0 0	0 0	4 100
12	5	0 0	0 0	5 100
	345	94	51	197

We have plotted a curve of the percentages of the results obtained in order to make more apparent the significance of the results. Along the horizontal axis we have plotted the cases by mental (Binet) ages. Along the vertical axis we have plotted the percentages of the experimental results. Below each mental age is printed the number of cases at that age. The straight line curve represents type (3), those who do the test and get the illusion. The broken line curve represents type (2), those who do the test but who fail to get the illusion. The dotted line curve represents type (1), those who entirely failed to do the test.

From the curve the following conclusions are evident:

1. That this (De Moor size-weight illusion) test is a test of seven-year-old mental development, since at 7 years mental (Binet) age, 84 per cent. of the cases get the illusion, which percentage of correlation (more accurately 75 per cent.) has been accepted as diagnostic.
2. That ability to perform the test with or without getting the illusion is a test of four-year-old intelligence.

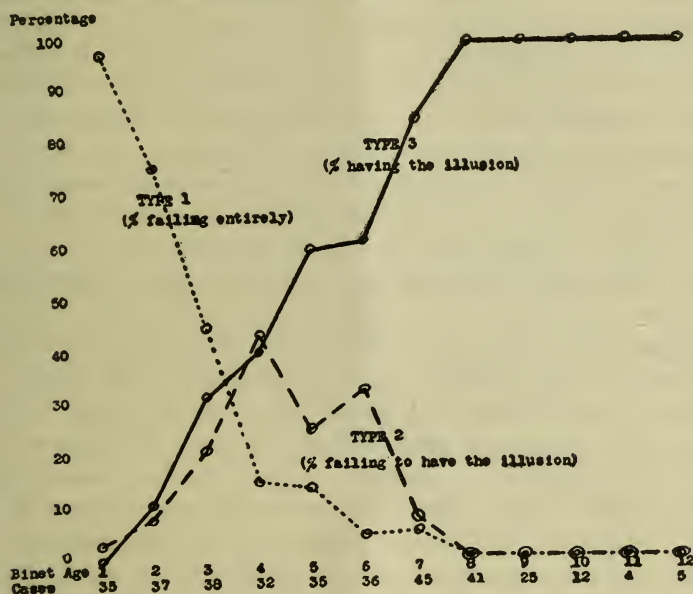
*2 accidental illusions.

†1 accidental illusion.

3. That at five years and at six years, getting the illusion is very nearly diagnostic of those who are able to perform the experiment, there being 70 per cent. and 65 per cent. at these ages who do get the illusion if they can perform the experiment.

4. That apparently the perception of the relation of size to weight develops in feeble-minded children at the period of from three to seven years, inclusive.

5. That at eight years and above, all are able to perform the experiment and to get the illusion.



There are at least two ways of explaining why persons of certain mental development should get this illusion.

(1.) The most natural explanation is that of normal experience. It is the universal experience after one has developed sufficiently in mentality to note relations, that of two things of the same appearance but of different size, the larger is the heavier. In this test the appearance makes the illusion, helped out perhaps by a certain amount of suggestion by the leading question, "Which seems the heavier?" suggesting innocently enough that one really is heavier. The two blocks are alike apparently in all respects except length, the matter of loading being unsuspected. Even if the loading is suspected, the normal person gets the illusion in spite of himself. One therefore expects that the longer block is the heavier, since being exactly the same as the other, except as to length, it should weigh more, proportionately to its length, but when, upon lifting the blocks they are sensed as weighing the same, this unexpected turn of affairs so disturbs

one's judgment that the smaller block seems to be and is judged heavier. The senses are not deceived, it is the judgment which is deceived, for the judgment was first prejudiced by the perception of size, so prejudiced that the size perception entirely dupes the weight perception. And the persistence of the illusion is very firm. The prejudice of the size perception is so insistent that even if the blocks be compared with closed eyes, the illusion still exists, for the hand at once detects which block is larger and having previously seen that both have the same appearance the illusion is obtained. The smaller block is judged the heavier because there is an actual reversal of judgment. The large block is expected to be heavier, but it is actually sensed as equal, and therefore the disappointed expectation instead of judging the two equal leads one to believe that the small one is heavier than it is. Or, looked at in another way, the two blocks actually are sensed as equal; but the larger was expected to be heavier and therefore the weight of the smaller block must be added to in one's judgment in order to satisfy the sense judgment, with the result that the smaller is judged heavier than it actually is.

(2.) The other explanation is one of neurological stimulation. The eyes see that one block is four times the size of the other. One's reason and experience then lead one to believe that the larger block weighs four times as much as the smaller, for to all appearances the blocks are alike and of the same density, and since masses of the same density vary directly as their volumes, a block having four times the volume of another just like it is expected to weigh four times as much. Consequently when one picks up the larger block, one uses a certain amount of sensory-muscular stimulation, the block is lifted and the stimulation is found to be sufficient. Then one proceeds to pick up the smaller block, but this time one spends only one-quarter (by assumption) of the sensory-muscular stimulation, for it is expected that this block weighs only one-quarter as much as the other. But at once it is found that this stimulation is not sufficient, for since the blocks actually weigh the same, they require the same amount of muscular energy to be lifted. The net result then is one of disappointed sensation which finds expression in a biased judgment and the smaller block is judged to be heavier than it really is. But since they really are equal and actually are sensed as equal, the total effect of the judgment is to pronounce the smaller the heavier.

So persistent is this illusion that I personally cannot force myself to judge the blocks equal, altho I know the illusion and altho I voluntarily will to overcome it. So persistent is my experiential judgment of the relation of size and weight that I cannot adapt myself to this condition. Nor can I overcome the illusion by closing my eyes. I always can tell which block is the larger by my touch and at once my judgment is biased. It is only by suspending the blocks from strings in such a way that I cannot

detect the size of either block that I judge them equal. And I have known most people emphatically to deny that the blocks are equal, and enough so that they honestly doubt the accuracy of one's scales when one attempts to verify the equality by actual weighing.

(3.) It has been attempted to explain the illusion on the basis of concentration of weight. Psychologically a pound of feathers is much lighter than a pound of lead, but we think that this explanation of concentrated weight seeming heavier than diffused weight is only saying less fully what we ourselves already have said.

It would be interesting to know what results would be obtained with normal people. It has been our experience in using this illusion at many places and large exhibitions that normal persons (our experience is limited to persons older than eight years) invariably get the illusion. We have known persons who suspected the illusion and therefore reported that the blocks weighed the same, but in each case this was not an honest report of the actual judgment. Unfortunately, we have no figures on this point. Concerning the development of the illusion among normal children we also lack figures. Our figures are based on mental ages, which represent cases ranging from 5 to 60 years chronologically. Since, however, the mental ages are representatives of normality of intelligence, we must assume for the present that our mental ages represent chronological ages of normal intelligence. We do not believe that this is a fair assumption, for it remains to be proved whether or not feeble-minded children of the same mental age as normal children of that chronological age have the same mental equipment. We expect soon to have some data in this regard, and when we shall have compared the results of this test on normal children as well as feeble-minded children, we shall have procured an interesting and perhaps valuable psychological datum.

Pennsylvania's Anti-Venereal Campaign

To educate every man and woman, and girl and boy, in the State of Pennsylvania, and by means of them many throughout the length and breadth of the land, first concerning the laws of sex hygiene as bearing upon physical health, reproduction, and the home; then in the facts regarding the social diseases and the measures necessary to prompt control.

To safeguard our women and children by placing in their possession sufficient knowledge to enable them to protect themselves, and the assurance that will lead them to demand male protection.

To bring it to pass that no boy or girl of the future shall be allowed to leave the home for the struggle of life untaught and unprotected by a knowledge of the principles of sex hygiene commensurate with the individual powers of mental and moral digestion. To see to it that parents

shall be trained to do the teaching; and that in such instances as furnish no parents able, or alive to the necessity, their places be filled by the physician, the school teacher and the college professor.

To convince the people of this Commonwealth that there remains a need only for legislation that will safeguard and, as far as possible prevent, both the woman and the man from marriage with an uncured victim of disease transmissible either directly or by hereditary taint. Among such diseases should be included syphilis, gonorrhea, tuberculosis, insanity, and alcoholism.

To render the hospitals, especially such as receive and subsist upon State financial aid, accessible to patients suffering from the social diseases, and if necessary to provide separate wards for the free treatment of actively contagious cases. Also to require hospitals to distribute educational leaflets to all such patients, treated in and leaving their wards and dispensaries, thus informing them with regard to the means of preventing the spread of social disease.

The Sleep of the Feeble Minded

By Lewis M. Terman, Ph. D.

(Appendix to a study of sleep of normal people.)

Through the courtesy of Superintendent Johnstone and Dr. Goddard, of the Vineland Training School, the authors were able to make a comparison of the sleep of feeble-minded individuals, both children and adults, with that of normals. Sleep records of 383 inmates were secured under the immediate supervision of Dr. Goddard, together with supplementary data, according to the following question sheet, which was filled out for each individual:

- (1) Sex..... Age.....
- (2) Grade of mentality
- (3) Type of defective
- (4) Regular hour of going to bed
- (5) Regular hour of getting up
- (6) At what hour does patient usually go to sleep?
(Give an actual record, if possible).....
- (7) At what hour does patient usually awaken?
(Give actual record for same night as above, if possible).....
- (8) Is sleep usually *unbroken, somewhat broken, or very much broken?*

- (9) Disposition of patient: quiet, irritable, good-natured, self-controlled, violent, fits of temper, moody, anxious, nervous, lacks self-control, lacks energy.
- (10) Conditions of health. Physical defects.

RESULTS.

(a) *The sleep of mental defectives, according to chronological age.* The following chart shows the average hours of sleep for the 193 of our defectives (sexes taken together), whose ages lay between six and nineteen years. For sake of comparison the curve for our normals is also produced.



The remarkable thing about the above curve is that *age differences are practically non-existent with the defectives*. The only marked rise in the curve comes at 14 years, the sleep of children 6 to 12 running slightly lower than that for the ages 16 to 19. If the curve for defectives above had been prolonged to include the ages above 19 years, it would be found practically horizontal from 20 to 40, with marked but gradual rise thereafter to 60 and above. The averages by decades are as follows:

	Number.	Sleep in hours and minutes.
Ages 21 to 30.....	137	9.05
Ages 31 to 40.....	39	9.06
Ages 41 to 50.....	11	9.26
Ages 51 and upwards.....	3	10.00

Our data, however, for the years six (2 cases), seven (3 cases), and above fifty (3 cases), are too scanty to be reliable.

(b) *The relation of sleep to degree of mental deficiency.* This is shown in another chart, together with another curve indicating the average number of hours spent *in bed* by the feeble-minded individuals of various mental ages.

Again, it is seen that the amount of sleep bears little relation to intelligence, and the conclusion arrived at in part II of the study of normal

children is borne out. To test the matter further the hours of sleep of the defectives of each chronological age were tabulated separately for each "mental age." The results showed only very slight differences for chronological age whatever the degree of mental defect, and such differences as were found are possibly due to the fact that the lowest grade defectives are given, on the average, a little more time in bed than are the higher grade defectives (see chart, page). Low-grade defectives, whatever their chronological age, here studied, sleep much less than normal children of the *same mental age*; while high-grade mental defectives sleep as much as normals of the same mental age, or even more. Thus practically all our 16-year-old feeble-minded children whose mental ages fall from two to six years, inclusive, sleep the same number of hours; namely, nine and a half. In trying to understand the feeble-minded individual child from the biological and genetic point of view, the question of correlation or non-correlation of the sleep requirements to degree of mental retardation is extremely interesting. It is unnecessary to add that our own scanty data, vitiated as they are by the regimen of institutional life, do not pretend to give any final answer to this question, still less to explain any relation that may be present. Whether sleep be explained in terms of instinct, chemical and toxic influences, or neural metabolism, the influence of extreme mental defect upon it is of interest, both theoretically and practically.

(c) Does the relative smallness of age differences in the sleep of these feeble-minded individuals as compared with normals indicate a genuine contrast between normals and feeble-minded, or is the phenomenon due merely to the daily program of the institution? It is evident from data already presented that the institutional program would act to *reduce* any genuine age differences that might exist, but since the hours in bed are regulated *in part* according to chronological age, we should hardly expect the age differences in sleep to be so completely obliterated. The fact of obliteration would itself indicate the extreme plasticity of the sleep habits.

This point, however, can only be settled by the collection of sleep records from children who do not lead an institutional life, and the writers would be glad to secure the co-operation of teachers of public school *special classes* in the collection of data on the subject. Correspondence with this end in view is invited.

(d) Sex differences of importance do not appear in our sleep records of the feeble-minded.

(e) For each age the variability among the feeble-minded as regards hours of sleep is much less than for the normals. This may be wholly the result of institutional life.

(f) Among the feeble-minded, as among normals, no relation appears between hours of sleep and the number of "nervous traits."

(g) In *quality* of sleep the feeble-minded of each grade of mentality

compare favorably with normal children. The figures for all grades taken together show that the sleep of 89 per cent. is "practically unbroken"; that of 8.4 per cent. "somewhat broken"; and that of 2.6 per cent. "very much broken."

In conclusion, it may be said that, unsatisfactory as our data are for the feeble-minded, they indicate in an interesting way the comparative independence of mental efficiency and hours of sleep. Our feeble-minded children, whatever grade of defect, sleep much *less* than normal children of the same age, the feeble-minded adults much *more* than normal adults. As regards sleep the feeble-minded retain throughout life the characteristics of childhood.

Reviews of Biochemical Literature

By Amos W. Peters

ON INDICANURIA.

The present review is devoted to the subject of indicanuria. Rightly or wrongly, this topic seems to have an irrepressible interest for those who are engaged in the care or treatment of mentally defective cases of the most varied types, and for the physician who is misled by such an "easy" test as that for the indigo coloring matter in urine. Physiological chemistry has, through a period of years, gradually overcome some of the pitfalls and difficulties of the chemical technique for the estimation of indican in urine, and has not yet arrived at a short and satisfactory quantitative method for the use of those who are not technical chemists. On this account it is still true that poor judgment in the selection of a method or a faulty technique may easily make this test of no significance chemically. Upon the other hand, biochemical investigation has long ago shown that the physiological or pathological meaning of the result of the indican test depends, among several other factors, very greatly upon the *quantity* of the indican. It is also known that the quantity stands in some relation to the diet and that the excretion of indican varies in intensity during a 24-hour period. Long¹ states that "in spite of all that has been written on the subject, many physicians persist in considering such amount of indican as we are here dealing with as pathological." Both normal and pathological urines may contain indican. In view of the results of Baar, below described, and also of earlier investigators, the significance of the finding of indican in urine was always very doubtful. The accessibility of these facts in the literature of investigation (see Neuberg, *Der Harn*, vol. 1, and the references there given, and Baar, below cited) make it absurd to examine, as is customary, any convenient specimen of urine

(1) Long, J. H. and Gephart, Frank. Some Analyses of Urine Composites. *Jour. Amer. Chem. Soc.* 34; 1235, 1912.

regardless of diet or the 24-hour excretion and then make use of the finding in the formation of a clinical judgment. Baar impatiently declares the judgment of intestinal intoxication inferred from an indican test to be a "superstition." The physician's only recourse in this day of research and of journals is the literature of investigation.

The following contribution on this subject seems to be worthy of critical attention: Baar, Gustav. (Karlsbad). (1) Indicanuria. A clinical study of its pathological and differential diagnostic significance. Berlin, 1912.

Some years ago the author treated cases which frequently showed indican in the urine with lactobacillin, milk-cereal diet, etc., according to the suggestion of E. Metschnikoff. He was compelled, after some months, to admit that this treatment was without any effect whatever upon the excretion of indican. He then sought other agents to influence the indicanuria. The influence of these he could determine only by repeated urinary examinations, since, with few exceptions, other clinical symptoms, *e. g.*, those of "auto-intoxication," were absent. The author therefore undertook this extended study in the hope of finding practical results. Among these he reckons the fact which was thus developed; that intestinal "auto-intoxication" which records itself by a constant indicanuria is one of the rarest of diseases. Furthermore, that the recurring indicanuria is a valuable differential diagnostic symptom of an obscure gastro-intestinal affection. The above prefatory statement indicates that the author's experiments have carried him far beyond the customary clinical opinion of the significance of indicanuria and to results entirely contrary to those expected. Perhaps it is best to present here the author's own formulation of his results (page 72):

(1) Indicanuria is evidence of bacterial protein decomposition somewhere in the body. Sometimes this process is located outside of the digestive tract and is then extra intestinal indicanuria. Most often the process lies within this tract, and is then intestinal.

(2) It has not yet been proved that there is a metabolic indicanuria dependent upon an abnormally high disintegration of tissue protein *without* the action of bacteria.

(3) Intestinal, better gastro-intestinal indicanuria may occur as

(3-1) *Constant* indicanuria, caused either by

(31-1) Anomalies of secretion in the gastro-intestinal tract; Achlorhydria (pernicious anemia, tuberculous, nervous); hypoplasia of the gastro-intestinal glands in the status thymolymphaticus (*i. e.*, intestinal auto-intoxication), or by

(31-2) Chronic pathologico-anatomical processes of the gastro-intes-

(1) Baar, Gustav (Karlsbad). *Die Indicanuri. Eine klinische Studie ihre Pathologie und differential diagnostischen Bedeutung.* Berlin. Urban & Schwarzenberg. 1912. P. VII 280.

tinal tract: Carcinoma ventriculi, hepatis, coli, recti, dysentery; colitis ulcerosa; tuberculosis peritonei, hepatic insufficiency.

(3-2) *Recurrent* indicanuria, caused by recidive processes of the gastro-intestinal tract. Ulcus ventriculi, duodeni, chole-cystitis, appendicitis, peritoneal adhesions.

(3-3) *Transitory* indicanuria, caused by

(33-1) Acute gastro-intestinal processes; Ileus, gastritis, gastro-enteritis, acute circulatory disturbances, acute exanthemata, or

(33-2) Transitory anomalies of secretion of the gastro-intestinal tract: Depression, epilepsy, etc.

A practical point of much importance to physicians who make indican tests results from the experiments of Gilbert and Weil, briefly referred to on page 4. These authors studied the two-hourly excretion of indican and found that its maximum stood in correlation with the time of digestion, *i. e.*, follows a meal by some hours. Baar urges the principle that is scarcely ever observed by the practical physician that (page 4), "only a 24-hour quantity of urine should be used for the indican test." Again (page 41), he urges that a single positive indican test no more diagnoses indicanuria than a single positive sugar test suffices to diagnose diabetes. Finally (page 72), he advises that for a period of several months the indican test be continued at intervals of 2 to 3 days, and states emphatically that "a *single* indican test has absolutely no value."

The clinical material which Baar studied embraced 2,880 cases, of which 1,611 more or less often gave the indican, and 1,269 cases never showed indican in the urine. Only those cases which gave a positive indican test *repeatedly* were regarded as pathological and classed as either recurrent or constant indicanuria as appears in the summary previously given. There was no apparent relation between sex and indicanuria. In view of the supposed frequency of intestinal auto-intoxication, it is noteworthy that there were cases of constant indicanuria in which an examination of the whole body, stomach content, feces, blood, showed nothing abnormal (except simple anemia), beyond the intensive indican reaction of the urine. But among 2,092 cases there were only 32 such, *i. e.*, only 1½ per cent. of all cases examined. For other important physiological and pathological relations the original must be read.

The subdivisions of the book treat successively of indicanuria with reference to its history, detection, etiology, clinical significance, and the history of 100 cases in considerable detail. There is also a bibliography of eight pages. The author used the Obermayer test, *i. e.*, hydrochloric acid, containing some ferric chloride), applied to 10 c.c. of urine which had been treated with basic lead acetate. The intensity of the blue color of the chloroform used to separate the indican was described by an arbitrary scale, and only qualitative tests were made.

Report on the Failures in the Public Schools of Norfolk, Va., in the February Examinations

Virginia is actively interested in the problem of backward children. The following report shows the result in Norfolk of a study of those who failed of promotion. The backwardness was determined by the Binet tests. The results are of great interest, being in line with what is being found elsewhere.

FIRST GRADE.							
Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
53	39	15	26	37	7		
1 year below							
54	39	16	19	30	12		
2 years below							
60	34	12	25	27	17	1	
3 years below							
38	26	3	11	10	8	4	3
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
205	138	46	81	104	44	5	3

SECOND GRADE.							
Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
44	30	15	12	35	5		
1 year below							
27	19	6	7	13	8		
2 years below							
17	13	6	9	6	9	1	1
3 years below							
26	17	7	14	9	8	6	3
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114	79	34	42	63	30	7	4

THIRD GRADE.							
Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
31	17	8	17	15	4	1	
1 year below							
41	22	9	14	17	11	2	1
2 years below							
22	14	4	10	10	7	2	1
3 years below							
33	14	4	10	6	12	5	2
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127	67	25	51	48	34	10	4

FOURTH GRADE.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
15	12	4	6	14	1		
1 year below							
17	14	3	3	10	6	1	
2 years below							
34	19	5	7	11	9	2	
3 years below							
22	16	5	5	3	11	7	1
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
88	61	17	21	38	27	10	1

FIFTH GRADE.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
16	10	3	1	8	2		
1 year below							
34	22	8	5	16	12	2	
2 years below							
18	10	3	4	3	9	5	
3 years below							
30	18	6	6	6	11	6	
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98	60	20	16	33	34	13	

SIXTH GRADE.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
3	1	0	1	2	1		
1 year below							
11	5	2	1	3	6	2	
2 years below							
13	7	3	2	3	5	3	
3 years below							
26	11	5	2	5	4	1	
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53	24	10	6	13	16	6	

TOTAL.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
162	109	45	63	111	20	1	
1 year below							
184	121	44	49	89	55	7	1
2 years below							
164	97	33	53	60	56	14	2
3 years below							
175	102	30	48	39	54	29	9
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685	429	152	213	299	185	51	12

REPORT ON COLORED CHILDREN.

FIRST GRADE.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
2	1	0	0	2			
1 year below							
2	2	0	0	2			
2 years below							
8	5	1	4	7	1		
3 years below							
10	4	1	4	4	3	3	
<hr/> 22	<hr/> 12	<hr/> 2	<hr/> 8	<hr/> 15	<hr/> 4	<hr/> 3	<hr/>

SECOND GRADE.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
3	1	1	1	2	1		
1 year below							
17	8	2	11	10	4	2	
2 years below							
8	2	0	7	2	4	2	
3 years below							
18	3	0	16	12	4	2	
<hr/> 46	<hr/> 14	<hr/> 3	<hr/> 35	<hr/> 26	<hr/> 13	<hr/> 6	<hr/>

TOTAL.

Normal	Physically defective	Corrected	Absent 10 or more days	Failed No. times			
				1	2	3	4
68	26	5	43	41	17	9	

New Jersey is the first State where the Legislature has provided for State-wide special training for all subnormal children, retarded as well as defective.

Little's Sayings and Doings of the Children

One day Willie M. was rather slow about doing his work. The teacher said: "Willie, are you thinking?" Willie looked up and answered: "I have thought once, but Professor Johnstone said one Sunday, 'You should think twice before you do a thing.' I'm thinking twice."

In passing to her place, Frances accidentally knocked against Sarah C. Sarah said: "Oh, do be careful, or you'll knock all the ginger out of me."

A nature class was having a lesson about the cat. Little Joe I., who is a deaf mute, ran quickly from his seat and picked up one of the toy cats from the table and carried it over to the window where there was a little mouse trap. Then he took both to the teacher, telling her, as best he could in his way, that cats like to eat mice.

Lavina X. is twelve years old mentally and is in the Physical Culture Class with some of the highest grade girls. Lavina has a remarkable memory and along some lines stands out above the other girls in the class. However, she has a few peculiarities, one of which is shown in our ball bouncing games. She stands on the circle or in line with the class and as the other girls throw and bounce the balls, Lavina bends down, gently lays her ball on the floor, then picks it up and stands erect, perfectly satisfied that she has done just what the other girls are doing.

Katherine H., on entering the sewing class, where there was no chair left for her, went into the hall to get one. After she had been gone for some time, the teacher went to look for her, and found her standing looking at a broken one. Miss R. said: "Katherine, why don't you bring your chair in?" Katherine replied: "There ain't any." Miss R.: "Why don't you take that one near you?" Katherine: "I don't like it; it's torn."

Because of their good work during the whole year, and especially their helpfulness with the Christmas play, Louisa B. and Florence D. were taken for a little trip to Philadelphia. They spent the morning visiting the big stores; they were delighted with the fancy work and the pretty ribbons, laces, dresses, etc.

They lunched in the Wanamaker Crystal Room, enjoying the pretty doilies, dishes, etc., especially the orchestra.

In the afternoon they went to see "Little Boy Blue," which pleased them exceedingly. They asked Mrs. N. several times if she thought this and that was as pretty as "Princess Chrysanthemum," their play, had been. After the play they got some candy and little things for their school friends, and at 8 o'clock returned home tired, contented, and as happy as little queens. It is a great thing to really earn such a privilege and, oh, how good to be able to talk about "what you saw and did on that wonderful day."

The average monthly salary of American school teachers in 1870 was \$28.54. It is now \$61.70.

The common roller towel is specifically prohibited in the schools of Indiana and Kansas. The regulations in Kansas provide that "each pupil must have an individual towel, or sanitary paper towels shall be furnished."

An international congress for physical education will be held in Paris, March 17-20, 1913, under the auspices of the Faculty of Medicine. It is expected that the United States will be represented.

Current Events

JANUARY, 1913.

January 1. Repeated Christmas play, "Princess Chrysanthemum," for the children. Some seventy children from the State Home for Women were invited. All had a most enjoyable evening.

January 2. Teachers left for a few days' vacation.

January 11. Gordon M. gave a party in Maple Cottage. He invited his boy friends, also a few employees, who reported a fine time. Superintendent Johnstone attending Pittsburgh Council of Education.

January 13. Resumed evening classes.

January 14. Sidney C. began his lessons on the writerpress.

January 15. The seventy-eight children who took part in the Christmas play gave their yearly Christmas party this evening. About forty employees and a few special friends attended. The children royally entertained all present by a repetition of many parts of the play, interspersed with games, etc. Refreshments, consisting of ice cream, cake, candy and fruit were served. This is always a much enjoyed event.

January 16. The boys in Baker Cottage had a little party. Each boy was allowed to write to one friend.

January 18. Floranc M. had a party in Robison A play room, about sixty boys participating. His mother had sent him a large birthday cake with nineteen candles, which were lighted while refreshments were being served. The Wilbur and Moore Cottage girls had a delightful party in Wilbur Cottage. The girls played games, had music, etc. While this was going on in the sitting rooms, the employees made candy and prepared refreshments in the kitchen. The time passed all too quickly.

January 20. Professor and Mrs. Johnstone entertained the members of our "Big Family." Every one considered the records on the new Victrola an exceptional treat, and all spent a most delightful evening. The farmers held a meeting in Garrison Hall.

January 22. A special meeting of the Training School Association was held.

January 23. The new school building was accepted to-day.

January 25. Richard H. gave a party in Elm Cottage, inviting the boys of that cottage and a few special friends. The Maxham girls had a candy pull.

January 26. At assembly Professor Johnstone told the boys and girls all about the new farming project. In the evening, the laboratory staff entertained the boys with stories and music.

Miss Badger, formerly of our teaching staff, has been called to Birmingham, Ala., where she will organize and take charge of the special classes.

A. F. NASH.





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